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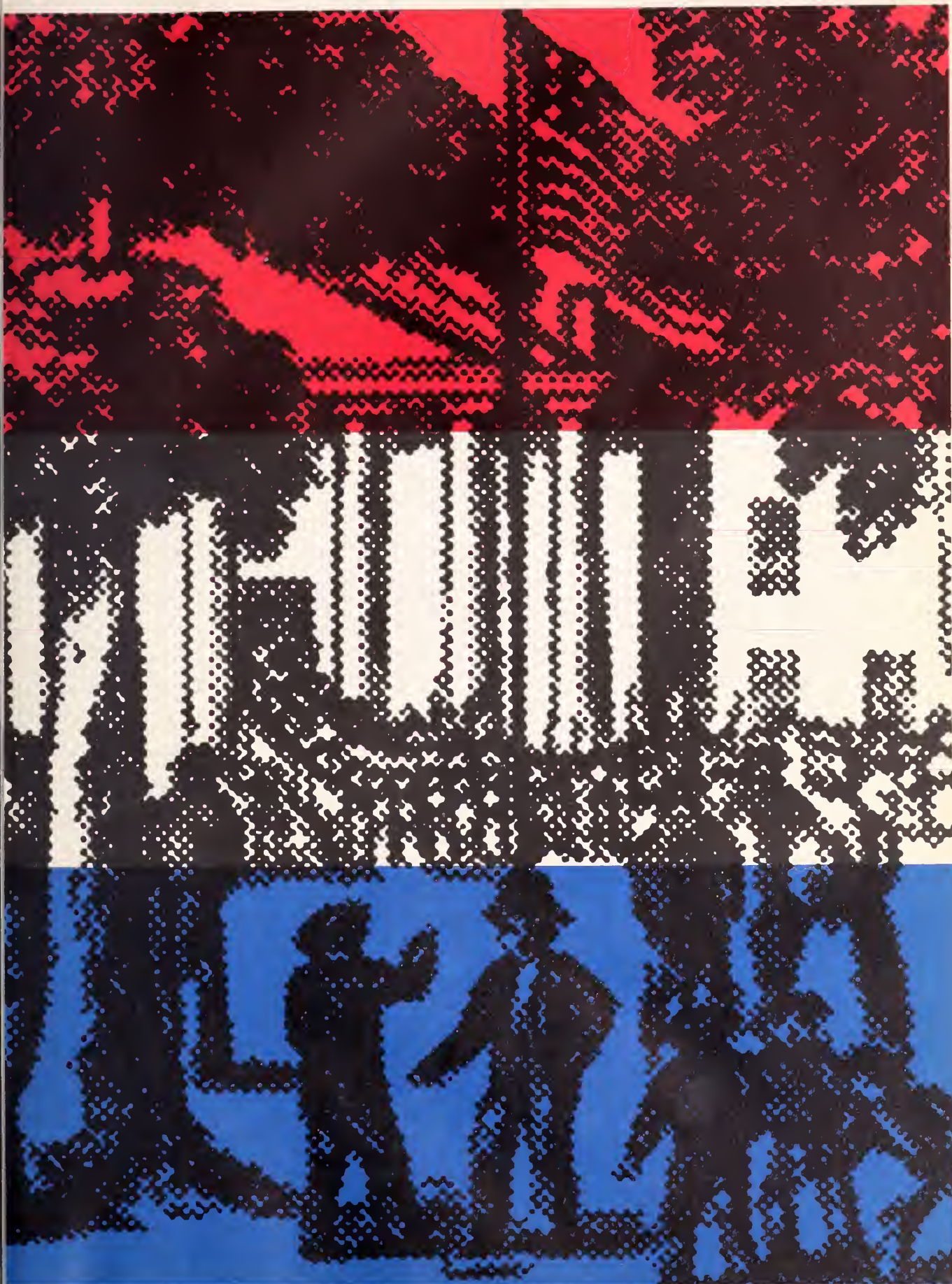




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OKLAHOMA STATE MEDICAL ASSOCIATION





Proved electro-objectively: A single 30-mg dose nightly helps insomniacs fall asleep, stay asleep, and sleep longer

Controlled studies of 23 insomniac and 13 normal subjects treated with Dalmane (flurazepam HCl) in five sleep laboratories generated over 4000 hours of electroencephalographic, electro-oculographic and electromyographic tracings. These studies revealed that Dalmane 30 mg nightly usually induces sleep in 22 minutes and provides seven to eight hours of sleep.^{1,2,3}

Moreover, Dalmane 30 mg was found to be useful in all common types of insomnia in which it was studied. Of drugs studied in a sleep laboratory,⁴ Dalmane 30 mg was the only one that consistently reduced sleep induction time and maintained sleep nightly for 14 consecutive nights of use.

Confirmed clinically

Fifty-three controlled studies using a paired-night, double-blind crossover design have evaluated Dalmane clinically. In the majority of these, Dalmane (flurazepam HCl) significantly reduced sleep induction time and increased sleep duration. Dalmane and a placebo were alternated on successive nights in 2010 insomniacs, 1706 of whom were studied for a single night-pair, and the remainder for as many as fifteen paired-nights. A patient preference for Dalmane was apparent in the paired-night studies.

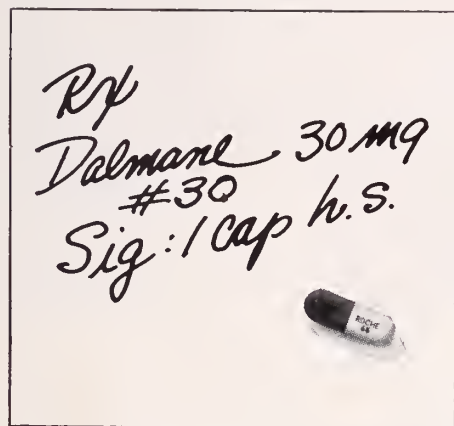
Dalmane was also preferred to certain hypnotics in two separate preference studies. In each of two double-blind studies, Dalmane 30 mg retained effectiveness for the total period of seven consecutive treatment nights, according to subjective/objective evaluations.

In summary, Dalmane is useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. It can be used effectively in patients with recurring insomnia or poor sleeping habits, and in acute or chronic medical situations requiring restful sleep.

Dalmane (flurazepam HCl) is generally well tolerated

In most instances in which adverse effects with Dalmane were reported, they were mild, infrequent and seldom required discontinuation of the drug. Dizziness, drowsiness, lightheadedness and the like were the side effects most frequently noted, particularly in elderly or debilitated patients.³ Instances of hepatic dysfunction, paradoxical reactions (excitement) and hypotension are rare with Dalmane, and morning hang-over is relatively infrequent. In studies to date the effectiveness of Dalmane for recommended periods of use is maintained without need to increase dosage.

References: 1. Kales, A., et al.: "Effectiveness of Sleep Medications: All-Night EEG Studies of Hypnotic Drugs," in Proc. 7th Internat. Cong. Electroencephal. and Clin. Neurophysiol., San Diego, Calif., Sept. 13-19, 1969. 2. Kales, A., et al.: "Psychophysiological and Biochemical Changes Following Use and Withdrawal of Hypnotics," in Kales, A. (ed): *Sleep: Physiology and Pathology*, Phila., Lippincott, 1969, p. 331. 3. Data on file, Medical Department, Hoffmann-La Roche Inc.



Before prescribing, please consult Complete Product Information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

For the sleep your patients need

New **Dalmane**[®]
(flurazepam hydrochloride)

You know
diuretics
medically.

Short-acting diuretics may create abrupt,
inconvenient waves of diuresis.
Long-acting Hygroton offers a gentle flow
rather than abrupt diuresis.
It's smooth acting.
In edema and hypertension.

Hygroton[®] chlorthalidone USP

Makes water, not waves.

But
have you
met them
socially?



Electrolyte imbalance may occur when using diuretics. Hygroton is contraindicated in severe renal or hepatic diseases and, of course, if it causes hypersensitivity. Carefully supervise those who may be receiving other antihypertensives.

Hygroton[®] chlorthalidone USP **Indications:** Hypertension and many types of edema involving retention of salt and water. **Contraindication:** Hypersensitivity and most cases of severe renal or hepatic diseases. **Warnings:** With the administration of enteric-coated potassium supplement should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, perforation) should be kept in mind. Surgery for these lesions has been required frequently and deaths have occurred. Discontinue enteric supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Use with caution in pregnant nursing mothers since the drug crosses the placental barrier and appears in cord blood and since thiazides appear in breast milk. The drug in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. When used in women of childbearing age, balance benefits of drug against possible hazards to fetus. **Precautions:** Antihypertensive therapy with this drug should be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs. Reduce dosage of concomitant antihypertensive agents by at least one-half. Because of the possibility of progression of renal damage, per determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated by imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued until potassium supplements given, provided the patient does not have marked oliguria. Take special care in cirrhosis or severe ischemic heart patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. **Adverse Reactions:** Nausea, gastric irritation, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, glycosuria, hyperuricemia, headache, muscle cramps, hypotension, which may be potentiated when chlorthalidone is combined with barbiturates, narcotics or alcohol, aplastic anemia, leuk thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angitis, acute glomerulonephritis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with compounds include: jaundice, xanthopsia, paresthesia, and photosensitization. **Average Dosage:** 50 or 100 mg. with breakfast daily or day. **How Supplied:** White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000. (B)46-230-G For full see the complete prescribing information.

GEIGY Pharmaceuticals, Division of CIBA-GEIGY Corporation, Ardsley, New York 10502

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New York Academy of Medicine
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The JOURNAL

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1971
Vol. 64, No. 7

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It's working, even when she's not.



10:30 p.m. To bed with tablets or suspension. Either dosage form of Gantanol® (sulfamethoxazole) provides reliable therapy for nonobstructed cystitis.

The convenient *b.i.d.* schedule lets the patient rest assured — while Gantanol fights the infection.

1:30 a.m. Antibacterial blood and urine levels build fast.

Peak therapeutic effectiveness starts within 2 to 3 hours of the initial dose.

In addition, Gantanol diffuses readily into interstitial fluids for antibacterial activity at the foci of the infection.



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Effective in acute, recurrent or chronic urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) and in the absence of obstructive uropathy or foreign bodies. *Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response. Add aminobenzoic acid to culture media of patients receiving sulfonamides. Resistant organisms present a current problem to the usefulness of antibacterial agents. Blood levels should be measured in patients receiving sulfonamides for serious infections, since there may be wide variations with identical doses; 20 mg/100 ml should be the maximum total sulfonamide level, as adverse reactions occur more frequently above this level.

Contraindications: Sulfonamide hypersensitivity; infants

less than 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis); pregnancy at term and during nursing period.

Warnings: Safe use in pregnancy has not been established, and teratogenicity potential has not been thoroughly investigated. Sulfonamides will not eradicate or prevent sequelae to group A streptococcal infections, *i.e.*, rheumatic fever, glomerulonephritis. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported; early clinical signs such as sore throat, fever, pallor, purpura or jaundice may indicate serious blood disorders. Complete blood counts and urinalysis with careful microscopic examination are recommended frequently during sulfonamide therapy. Clinical data are insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Use with caution in patients with impaired renal or hepatic function, severe allergy, bronchial asthma and in glucose-6-phosphate dehydrogenase-deficient indi-



4:30 a.m. Effective through the night. Each dose of Gantanol (sulfamethoxazole) delivers up to 12 hours of antibacterial action against susceptible

pathogens, such as *E. coli*, *Klebsiella-Aerobacter*, *S. aureus* and others. Action all day. And action all night to prevent retained urine from becoming the medium for bacterial proliferation.

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in nonobstructed urinary tract infections

Gantanol[®] B.I.D. (sulfamethoxazole)

Tablets/Suspension

12 hours of therapy with every dose



viduals. In the latter, dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *allergic reactions:* erythema multiforme (Stevens-Johnson syndrome), skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *gastrointestinal reactions:* nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; and *miscellaneous reactions:* drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities with some goitrogens, diuretics (aceta-

zolamide and thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age, except adjunctively with pyrimethamine in congenital toxoplasmosis. Usual dosage is as follows:

Adults—2 Gm (4 tabs or teasps.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection. *Children*—0.5 Gm (1 tab or teasps.)/20 lbs of body weight initially, followed by 0.25 Gm/20 lbs *b.i.d.* Maximum dose for children should not exceed 75 mg/kg/24 hrs.

Supplied: Each tablet or teaspoonful (5 ml) of suspension contains 0.5 Gm sulfamethoxazole.



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Nutley, N.J. 07110

Ulcer Re- lief!

Dicarbosil.[®] ANTACID

Your ulcer patients and others will respond favorably to it. Specify DICARBOSIL 144's—144 tablets in 12 rolls.



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Free toxicological consultation and information on medicinal and commercial products is available by phone when your patients are poisoned. Center is open 24 hours each day, seven days a week, with professionally trained staff present. Call area code 713, SO 5-1420, SO 5-2408 or 765-1011 University of Texas Medical Branch, Galveston, Texas 77550. Supported by PHS-CPF-69-21.

Brief Summary of Prescribing Information—9-9/22/69. For complete information consult Official Package Circular.

Indications: Essential hypertension. Use cautiously in patients with renal insufficiency, particularly if they are digitalized.

Contraindications: Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

Warnings: Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distension, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients. **Use in Pregnancy:** Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss or protoveratrine A may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Stop therapy if protoveratrine A induces digitalis intoxication.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being pre-diabetic should be kept under close observation if treated with this agent.

Adverse Reactions: Hydroflumethiazide: Skin rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation. *Reserpine:* Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares. *Protoveratrine A:* Nausea, vomiting, cardiac arrhythmia, prostration, blurring vision, mental confusion, excessive hypotension and bradycardia. (Treat bradycardia with atropine and hypotension with vasopressors.)

Usual Dose: 1 tablet b.i.d.

Supplied: Bottles of 60, 600, and 1000 scored 50 mg. tablets.

Salutensin[®]

hydroflumethiazide, 50 mg./reserpine,
0.125 mg. protoveratrine A, 0.2 mg.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

The antihypertensive therapy that is easy to live with.*

When successive blood pressure readings confirm essential hypertension, consider Salutensin for:

Easy-to-live-with control. Gradual reduction of blood pressure leading to decisive, comfortable control is the common clinical response.

*Salutensin is usually well-tolerated (however, serious side effects can occur; see adjacent column for brief summary of prescribing information).

Easy-to-live with dosage. Two tablets a day usually achieves control. One to two tablets a day often maintains control without need for additional antihypertensive agents.

Easy-to-live with cost of therapy. The one to two tablets a day maintenance dose makes Salutensin economical to stay with. Important, because long-term control calls for long-term therapy.

Salutensin[®]
hydroflumethiazide, 50 mg./reserpine,
0.125 mg. protoveratrine A, 0.2 mg.



STANDARD CLAIM FORM

APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION AND THE ASSOCIATION OF HEALTH AND ACCIDENT INSURORS OF

INSURANCE COMPANY	ADDRESS
-------------------	---------

TO:

ATTENDING PHYSICIAN'S REPORT

1. PATIENT'S NAME	2. ADDRESS
-------------------	------------

4. DIAGNOSIS (EXPLAIN COMPLICATIONS)

5. ADDITIONAL DIAGNOSES (CHRONIC DISEASE OF DEFECT FOUND DURING PRF)

6. DATE OF ONSET	7. DATE FIRST CONSULTED	8. DUE TO PREGNANCY <input type="checkbox"/> YES <input type="checkbox"/> NO
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11. SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12. IF HOSPITALIZED, NAME AND ADDRESS OF

15. NAME AND ADDRESS OF OTHER

COMPLETE IF PATIENT

16. TOTAL DISAP
FROM
17. P

PLEASE ATTACH TO COMPLETED INSURANCE CLAIM FORM

STANDARD INSURANCE REPORTING FORMS For Oklahoma Physicians

STATEMENT FOR PROFESSIONAL SERVICES RENDERED

APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

PHYSICIAN'S NAME	PATIENT'S NAME
ADDRESS	

COMPLETE FOR MEDICAL CARE ONLY: AT HOSPITAL, HOME, OR OFFICE
GIVE THE DATES OF TREATMENT BY INSERTING MONTH AND YEAR. INDICATE EACH
H—HOSPITAL V—HOME O—OFFICE OR CLINIC

MONTH AND YEAR	1	2	3	4	5	6	7	8	9	10	11	12

PLEASE STATE YEAR

HOSPITAL

Form 101

STANDARD CLAIM FORM

1 Pad \$.70
(50 Forms)
3 Pads 1.95
(150 Forms)
6 Pads 3.75
(300 Forms)
12 Pads 6.60
(600 Forms)

SAMPLE FORMS
SENT ON REQUEST

Form 102

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PROFESSIONAL SERVICES
RENDERED

1 Pad \$.80
(50 Forms)
3 Pads 2.25
(150 Forms)
6 Pads 4.35
(300 Forms)
12 Pads 7.70
(600 Forms)

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Prepared by the Insurance Committee of the Oklahoma State Medical Association these forms are designed to simplify this tedious office procedure. FORM 101, Standard Claim Form and FORM 102 Statement for Professional Services Rendered are available immediately in pads of 50. See price list below and order now . . . use the handy order form.

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Tepanil® Ten-tab® (continuous release form) (diethylpropion hydrochloride, N.F.)

When girth gets out of control, TEPANIL can provide sound support for the weight control program you recommend. TEPANIL reduces the appetite—patients enjoy food but eat less. Weight loss is significant—gradual—yet there is a relatively low incidence of CNS stimulation.

Contraindications: Concurrently with MAO Inhibitors, in patients hypersensitive to this drug; in emotionally unstable patients susceptible to drug abuse.

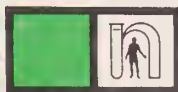
Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy, unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathamimetic agents, it may occasionally cause CNS effects such as insomnia, nervousness, dizziness, anxiety,

and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardiovascular effects reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. Allergic phenomena reported include such conditions as rash, urticaria, ecchymosis, and erythema. Gastrointestinal effects such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

Convenience of two dosage forms: TEPANIL Ten-tab tablets: One 75 mg. tablet daily, swallowed whole, in midmorning (10 a.m.); TEPANIL: One 25 mg. tablet three times daily, one hour before meals. If desired, an additional tablet may be given in mid-evening to overcome night hunger. Use in children under 12 years of age is not recommended.

T 107/471/US PATENT NO. 3,001,910



THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC
PHILADELPHIA, PENNSYLVANIA 19144



Painful night leg cramps...

unwelcome bedfellow for any patient—
including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

QuinammTM
(quinine sulfate 260 mg., aminophylline 195 mg.)

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and stotic foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.



THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Specific therapy for night leg cramps

Choose the smooth road to thyroid replacement therapy



The automatic



transition.

Your patients start thyroid therapy smoothly, easily. They feel better all along the way with no metabolic "bumps."

The gradual physiologic action of T_4 SYNTHROID provides virtually an "automatic" transition through the range of complete thyroid replacement therapy.¹

Predictably responsive!

This kind of comfortable patient response has made SYNTHROID the most widely prescribed brand of thyroid drug in the United States. It's a Cadillac of thyroid medications ... with Volkswagen economy.²

The road to normalized thyroid status is a continuous one. You make it smooth and economical with SYNTHROID.

1. The deiodination of T_4 to T_3 at the cellular level has been discussed in the literature. Reprints on the subject are available from the Flint Laboratories Medical Department. Use of T_4 alone therefore provides your patients with a natural hormone combination of T_3 - T_4 .
2. Patient cost of SYNTHROID is less than a penny a day more than desiccated thyroid. SYNTHROID costs patients nearly 50% less than the synthetic combination products: American Druggist BLUEBOOK, March 1970-71

Synthroid
(sodium levothyroxine)



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TO START ALL YOUR PATIENTS ON
SYNTHROID, IN THESE STRENGTHS:
0.05 mg. (white); 0.1 mg. (yellow);
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Precautions: As with other thyroid preparations, an overdosage may cause diarrhea or cramps, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving the drug should be observed closely for signs of thyrotoxicosis. If indications of overdosage appear, discontinue medication for 2-6 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, as Addison's Disease (chronic subcortical insufficiency), Simmond's Disease (panhypopituitarism) or Cushing's syndrome (hyperadrenalism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.

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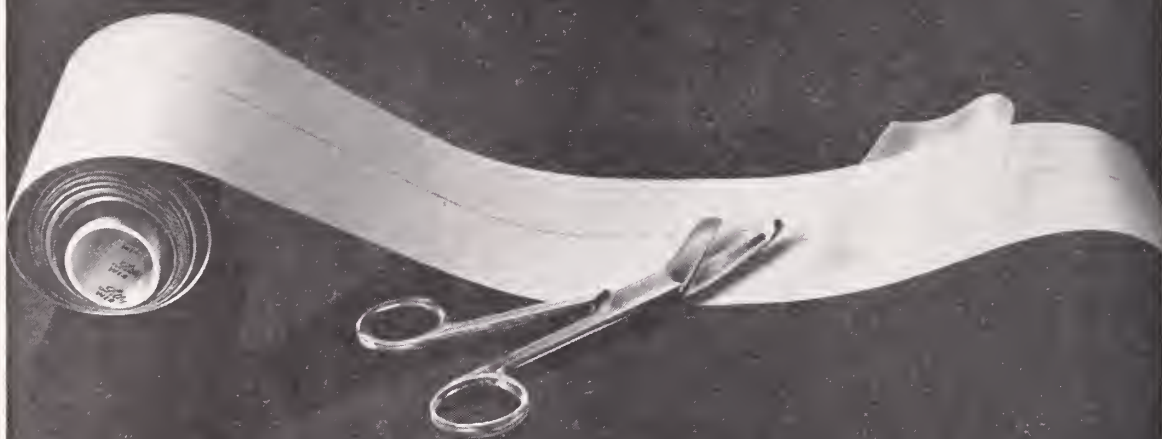


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Abortion

AS A GYNECOLOGIST I am concerned with the quality of human reproduction. I favor those measures or attitudes which would make it possible for each conception to be the result of informed deliberate choice, not casual decision or accident, and for each birth to result in a healthy child and a wanted child.

Abortion is the termination of pregnancy prior to the time of viability (20 weeks or 500 grams). Abortion may occur spontaneously (in 10 to 50 percent of gestations) or be induced by a variety of medical procedures. The state law of Oklahoma, as well as most other states, considers the induction of abortion by medical procedures to be illegal unless the abortion is accomplished "to preserve the life of the woman." That description of a circumstance has been ruled unconstitutionally vague by the federal courts of several states. The majority of state laws of this type were passed in the 1870's. The purpose of such legislation is uncertain, but there is evidence that it was to protect women against the morbidity and mortality which accompanied abortion at that time. That hazard and, therefore, the initial purpose of the laws no longer exist. When accomplished by a competent physician in an appropriately equipped medical facility, induction of abortion carries less risk than childbirth. However, the non-availability of hospital abortion, resulting from this restrictive legislation, drives women to the hands of untrained persons and inadequate facilities with the result of substantial morbidity and mortality. Moreover, these laws are largely unenforced and unenforceable. In addition to the out-of-hospital criminal abortions, induced abortions, which are illegal by the law, have been and are performed in hospitals in every state. Criminal action has never been brought against a reputable physician who has accomplished an abortion in an accredited hospital with appropriate consultation, even if such an abortion had violated the law. To my knowledge, this is the only example of legislation which specifies the behavior of a physician in the

performance of his medical responsibility with regard to a specific procedure. Nowhere else is there legislation which dictates specific medical practice. It is clear that legislation has not kept pace with advances in medical science.

There are areas in which termination of pregnancy is a procedure firmly established by medical science and approved as clinically sound by an overwhelming majority of medical opinion. There are medical illnesses in which a pregnancy may worsen the disease, impair the health or well-being of the patient or interfere with the effective and appropriate treatment of that disease. While the number of such circumstances is small, they do exist and the medical advantage of termination of pregnancy is clearly established. Abortion is considered medically sound for both maternal and fetal reasons in cases where there is prenatal evidence of a developmental abnormality in the embryo which will result in the birth of a child permanently, hopelessly handicapped. It is now possible to make such prenatal diagnoses with accuracy in the first trimester of pregnancy. Humanitarian considerations in the practice of medicine include abortion as part of the physician's management of patients pregnant as a result of rape or incest, or who are children. There are also socio-economic considerations. These involve consideration of the individual needs of a pregnant patient and the mutually involved members of her family. Consider the woman who is incompetent to be responsible for pregnancy by reason of age or mental, physical, emotional or economic inadequacy, and the woman whose pregnancy would have a significant adverse effect upon the health and well-being of other children—largely the result of social pressure.

Most of these areas are concerned with needs of the pregnant woman, but we must

also consider the needs of the conceptus. The fate of an unwanted child born into our society is known to be unfavorable and the number increases. The cost to society for the support of these children is staggering. Such a child is subject to most ills of our society and runs the risk of having to surmount greater social and mental handicaps than his peers. Who speaks for the unborn child? I do! Anyone does who has observed the disastrous social, economic and medical consequences of unwanted pregnancy and unwanted childbirth.

The optimum way to eliminate those circumstances just enumerated, is the complete availability and utilization of effective and acceptable methods of contraception. Birth control and comprehensive family planning offer a means of preventing these problems. The need for termination of pregnancy as a part of medical care could be eliminated in most of the cases. However, abortion will be necessary where contraception has been unavailable or has failed or has been unused.

A promptly performed abortion is less dangerous than normal childbirth, does not produce sterility and, *per se*, does not produce subsequent adverse psychologic sequelae. Legislation which rigidly restricts

the termination of pregnancy by a physician discriminates against the poor. Abortion, safely done, is and has been available to the affluent of our society. But this is not true for the poor—the segment of our society from whom the greatest number of cases needing this procedure come. Abortion need not be expensive. Done as an outpatient procedure, under local anesthesia, by a competent physician, in a well equipped and staffed medical facility, it can be done economically.

Therefore, I see a need to eliminate or modify laws which serve only the purpose of legislating morality—something which has not and cannot be accomplished—which sufficiently interfere with a physician's practice of medicine to prevent him from carrying out his ethical and professional responsibilities to his patient, which deny the female the right of decision and justify compulsory pregnancy. The absence of such restrictive legislation would make it possible for those interested in the quality of human reproduction to more effectively make it possible for every conception to be the result of a *deliberate choice*—an informed choice—and for every child born to be *healthy* and *wanted*.—James A. Merrill, M.D., Professor and Head of Gynecology and Obstetrics, University of Oklahoma School of Medicine □

REGISTRATION

Physicians who have inadvertently failed to keep a copy of their new federal narcotics and dangerous controlled substance number may obtain their number by contacting the Bureau of Narcotics and Dangerous Drugs in Oklahoma City, Area Code 405, 231-4141.



In my last communication I briefly reported on the Annual State Medical Association Meeting held in Tulsa. It seems only logical that since the American Medical Association Meeting occurred shortly afterward that I de-

vote a few words to the American Medical Association Convention. It is not only logical but it is historical when one considers the history of the two associations.

As your president I have found it interesting to delve only briefly into the history of our own association because of lack of time and pressure of other duties. The first medical meeting occurred in Indian Territory on April 18, 1881 in Muskogee. The Oklahoma Territory Medical Meeting first met on May 9, 1893 in Oklahoma City.

In 1904 the Oklahoma Territorial Medical Association which represented what is now western Oklahoma reorganized adopting the name of the Oklahoma State Medical Association. In this same year this society was organized as a component of the American Medical Association which itself had been organized only three years earlier. In 1906 the Oklahoma State Medical Association amalgamated with the Indian Territories Medical Association which at that time represented the eastern part of what is now Oklahoma and the Oklahoma State Medical Association designation was retained. At the same time the constitution and bylaws of the American Medical Association were

adopted for our present Oklahoma State Medical Association.

The 120th annual convention of the American Medical Association has come and gone. As with all meetings, assessments of its results and its influence on the course of medicine will not be known for some time. This has been an important meeting. It has made possible the gathering of the minds of medicine for the purpose of establishing policies for the betterment of medicine as an organization and for the consumers benefit. Regardless of what our individual thinking is with regard to the efficacy of the association as a whole there is no question but that we are in need of national leadership. Without this leadership organized medicine will collapse and become fragmented into autonomous institutions with no mutual goal. In this context, it may be noted that our own Oklahoma association was the first state association to make membership in the American Medical Association mandatory.

Although we are concerned with problems on local and state levels, these are problems which exist throughout the entire nation. It is only by means of placing our mutual trust in our best leaders and individuals who possess clear thinking and reasoned ideas which in turn they can combine into a concerted effort, that we can hope to preserve the practice of medicine in a democratic fashion.

For further information on the history of the Oklahoma State Medical Association, I would refer you to the 50th anniversary issue of the *OSMA Journal*, Volume 49, Number 5, published in May of 1956. □

Sincerely,

Lucien G. Pasquetti

Addison's Disease

A Review of Thirty-Two Cases

JAMES L. MALES, M.D.
ALLEN L. SPITLER, M.D.
JOHN L. TOWNSEND, M.D.

Clinical clues are helpful in the diagnosis of Addison's disease, but specific measures should be employed in the diagnostic process. The association of other endocrinopathies demands good patient education and follow-up.

SINCE Thomas Addison's graphic description of "the constitutional and local effect of diseases of the suprarenal capsules" in 1855,¹ the syndromes associated with adrenal insufficiency have intrigued physicians. Even today, the rapid diagnosis of Addison's disease and the proper short and long term management of the patient's problems remain a great challenge. This review of the experience at the University of Oklahoma Medical Center points out some of these problems.

METHODS

The medical records of all patients coded as Addison's disease, Addisonian crisis, tu-

berculosis of the adrenal glands, adrenal cortical hypofunction and hypoadrenalism seen at the University of Oklahoma Medical Center Hospital and the Oklahoma City Veterans Administration Hospital between 1950 and 1970 (1961-1970 for the Oklahoma City V.A. Hospital) were reviewed. The diagnosis of primary adrenal insufficiency was considered established if one or more of the following criteria was fulfilled: Low basal steroid measurements combined with an inadequate response to ACTH administration; post-mortem documentation of adrenal destruction; or characteristic physical findings in association with chemical and hematological changes compatible with adrenocortical hypofunction which were corrected after the administration of corticosteroid medication.² The etiology was determined by the response to skin testing, the presence of pathological or radiological changes characteristic of inflammatory disease, and in some instances, by the histologic examination of the adrenal glands. The term "idiopathic" hypoadrenalism was used only when no infectious or infiltrative disease of the adrenal glands could be identified.

RESULTS

Thirty-two patients were found in whom the diagnosis of primary adrenal insufficiency was established. Twenty were male and 12 female. Twenty-one patients were

From the Department of Medicine, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

Table 1
INITIAL DIAGNOSES AMONG 32 PATIENTS WITH
ADDISON'S DISEASE

DIAGNOSIS	Number of Patients
Addison's disease.....	12
Gastrointestinal disorder.....	5
Pyloric Stenosis.....	1
Post-gastrectomy syndrome.....	1
Infectious hepatitis.....	1
Peptic ulcer disease.....	1
Acute abdomen.....	1
Tuberculosis.....	3
Anorexia nervosa.....	3
Flu syndrome.....	3
Menstrual irregularity.....	2
Hyperpigmentation.....	1
Cervical cancer.....	1
Hypoglycemia.....	1
Hypothyroidism.....	1
TOTAL.....	32

white, ten black, and one Indian. The age at the time of diagnosis ranged from 36 months (patient D.T.) to 74 years (patient J.V.). Table 1 denotes the original or primary diagnosis made by the referring physician or by the physician who first examined the patient at the University of Oklahoma Medical Center. The correct diagnosis was initially made in only 12 patients. In the bulk of the remaining cases, the initial diagnosis was commonly some form of gastrointestinal disease, tuberculosis, anorexia nervosa, or the flu syndrome. Isolated hyperpigmentation, idiopathic hypoglycemia, hypothyroidism and cervical malignancy each occurred once as the initial diagnosis.

Table 2 demonstrates that idiopathic Addison's disease was the most common cause of adrenal hypofunction. Tuberculosis accounted for the disease in 11 patients. The primary adrenal hypofunction was due to other causes in three patients. The mean age of the tuberculous and miscellaneous patients was 51.9 ± 10.5 and 57.3 ± 14.5 , respectively. The mean age of the patients with idiopathic disease was 27.25 ± 17.0 years. The difference between the mean ages of the idiopathic and either of the other groups is statistically, highly significant ($p < 0.005$). Of the 32 patients, 23 are living and well, six have died and three have been lost to follow-up.

Table 3 lists the occurrence of several clinical, biochemical or radiographic findings which were noted in this group of patients. Hypotension (BP less than 110 mm Hg) was recorded in 29 of the 32 patients. Cutaneous or buccal hyperpigmentation was found in 28. Eight patients, six female and two male, had decreased sexual hair. Although only three patients had hypercalcemia (serum calcium greater than 10.5 mg/100 ml), many were found to have hyperkalemia (serum potassium greater than 5 mEq/L.), azotemia (BUN greater than 20 mg/100 ml), and hyponatremia (serum sodium less than 135 mEq/L.). Calcification in the area of the adrenal gland was noted once, and two patients had calcified auricular cartilages.

Table 2
SUMMARY OF 32 PATIENTS WITH PRIMARY ADRENAL INSUFFICIENCY
Age refers to the age when hypoadrenalism was first diagnosed

PATIENT	AGE	SEX	ETIOLOGY	PATIENT	AGE	SEX	ETIOLOGY
J.J.	45	M	TB	T.W.	21	M	Idiopathic
R.W.	60	M	TB	G.G.	20	M	Idiopathic
N.B.	63	M	TB	J.S.	26	F	Idiopathic
E.W.	50	F	TB	A.F.	29	M	Idiopathic
E.W.	60	M	TB	W.W.	43	M	Idiopathic
F.S.	40	M	TB	S.K.	12	F	Idiopathic
R.P.	49	M	TB	D.T.	2½	M	Idiopathic
M.L.	60	F	TB	B.R.	10	F	Idiopathic
R.B.	37	F	TB	R.T.	13	M	Idiopathic
C.C.	40	F	TB	E.B.	37	F	Idiopathic
O.F.	67	M	TB	S.A.	11	M	Idiopathic
				R.N.	57	F	Idiopathic
				N.E.	35	F	Idiopathic
B.V.	48	F	Metastasis	R.S.	12	F	Idiopathic
J.V.	74	M	Leukemic Infiltrate	J.B.	61	M	Idiopathic
L.F.	50	M	Infarction	W.G.	40	M	Idiopathic
				E.A.	16	M	Idiopathic
				J.S.	45	M	Idiopathic

Table 3
OCCURRENCE OF PHYSICAL, BIOCHEMICAL AND
RADIOGRAPHIC CHANGES AMONG 32 PATIENTS
WITH ADDISON'S DISEASE

FINDING	NUMBER	PERCENT
Hyperpigmentation	28	87
Hypotension	29	90
Decreased Sexual hair	8	23
Azotemia	15	46
Hyperkalemia	19	59
Hyponatremia	13	40
Hypoglycemia	7	21
Hypercalcemia	3	8
Adrenal calcification	1	2
Calcified auricular cartilage	2	8

ACTH was administered to 20 patients combined with either plasma or urinary steroid determinations to document adrenal failure. Of the remaining 12 patients, three died in Addisonian crises before appropriate specific studies could be done and nine were diagnosed by some combination of hyperpigmentation, postural hypotension, azotemia, hyponatremia and hyperkalemia which returned to normal after steroid administration.

As seen in Table 4, two patients, both males, had TSH-unresponsive hypothyroidism (J.S. and W.G.), three females had primary hypogonadism (S.K., R.S., and A.F.), and three female patients (S.K., B.R., and R.S.) were documented to have hypoparathyroidism as well as hypoadrenalism.[†] Two tuberculous patients had diabetes, one had hyperthyroidism and one had an autonomous thyroid nodule. In contrast, only one instance of diabetes mellitus and one of hyperthyroidism were found among the patients with idiopathic disease. Thus, while there was no difference in the occurrence of diabetes mellitus and hyperthyroidism between the two groups, hypoparathyroidism, primary gonadal or thyroid failure occurred exclusively among the patients with idiopathic disease. In all, six of the 18 patients with idiopathic Addison's disease in this report had an associated primary endocrine organ failure, one had diabetes and one hyperthyroidism.

As soon as the diagnosis was established, some form of glucocorticoid was given as replacement therapy in all cases. Also, a mineralocorticoid preparation, usually 9a-

fluorohydrocortisone,¹ was given to all patients. No patient developed iatrogenic Cushing's syndrome, but hypertension and edema were often noted and required modification of the mineralocorticoid dose and adjustments in the patient's dietary sodium intake.

DISCUSSION

Among Thomas Addison's first group of patients, destructive lesions were found in the adrenal glands of most patients examined at autopsy,¹ and tuberculosis was the main cause for primary adrenal insufficiency during the next century.³ O'Donnell was among the first to call attention to the changing ratio of tuberculous to idiopathic adrenal insufficiency,⁴ and later series have continued to show this trend.⁵

The recognition of lymphatic thyroiditis in conjunction with Addison's disease was reported by Schmidt in 1926.⁶ This was extensively reviewed in 1964 by Carpenter who pointed out the apparent association with diabetes mellitus.⁷ Turkington and Lebovitz studied the presence of end-organ endocrine failure among the 32 Addisonian patients and documented the presence of some associated primary endocrinopathy in 13, with primary gonadal failure being most

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A graduate of the University of Missouri School of Medicine, Allen L. Spitler, M.D., is presently a resident in internal medicine at the University of Oklahoma Medical Center.

John L. Townsend, M.D., graduated from the University of Oklahoma School of Medicine in 1959, where he is now Head of the Department of Endocrinology, Associate Professor of Medicine and Assistant Professor of Community Health. He is certified by the American Board of Internal Medicine.

Table 4
OCCURRENCE OF OTHER ENDOCRINOPATHIES
AMONG 32 PATIENTS WITH PRIMARY
ADRENAL INSUFFICIENCY

PATIENT	SEX	ETIOLOGY	OTHER ENDOCRINE DYSFUNCTION
N.B.	M	TB	Diabetes Mellitus
E.W.	F	TB	Diabetes Mellitus
R.B.	F	TB	Hyperthyroidism
M.L.	F	TB	Autonomous Thyroid Nodule
J.S.	F	Idiopathic	Hyperthyroidism
A.F.	M	Idiopathic	Primary Gonadal Failure
S.K.	F	Idiopathic	Primary Gonadal Failure, Hypoparathyroidism
B.R.	F	Idiopathic	Hypoparathyroidism
S.A.	M	Idiopathic	Diabetes Mellitus
R.S.	F	Idiopathic	Primary Gonadal Failure, Hypoparathyroidism
W.G.	M	Idiopathic	Primary Hypothyroidism
J.S.	M	Idiopathic	Primary Hypothyroidism

common.⁸ Idiopathic Addison's disease is also known to be associated with hypoparathyroidism,⁹ and hypoparathyroidism with moniliasis.¹⁰

Work during the last decade concerning the etiology of idiopathic Addison's disease has suggested that the adrenal and other endocrine end-organ hypofunction may be on an "autoimmune" basis. Blizzard was able to demonstrate circulating anti-adrenal antibodies in 36 of 71 Addisonian patients and 24 of the 71 patients had antithyroidal antibodies as well.¹¹ Irvine *et al.* demonstrated anti-adrenal parenchymal antibodies in 80 percent of females affected by idiopathic Addison's disease and in ten percent of males, but no anti-adrenal antibodies were found in the sera of patients with tuberculosis or a large group of normal control patients.⁵ Blizzard *et al.* demonstrated that antibodies reactive with the tissue of a second endocrine end-organ are much more frequently found in the sera of patients with idiopathic Addison's disease than in sera from normal patients.¹² Irvine *et al.*⁵ have demonstrated the presence of antibodies reactive with steroid secreting cells of the adrenal, placenta, testes and ovary in the sera of patients with idiopathic Addison's disease, a finding which fits well with the documentation of frequent gonadal failure seen in patients with idiopathic Addison's disease.⁸

The diagnosis of Addison's rests primarily on a high level of suspicion on the part

of the physician. Indeed, the correct diagnosis was not initially suspected in over 60 percent of the patients in this report. There are several physical and chemical findings which provide good clues, but the ultimate diagnosis must hinge on the demonstration of the failure of the adrenal glands to respond to maximum stimulation with adrenocorticotrophic hormone (ACTH). Patients with total destruction of the adrenal gland will, of course, have low basal adrenal steroid secretion, but partial adrenal insufficiency with normal basal steroid secretion cannot be detected without prolonged ACTH administration.¹³

The major physical clues to the possibility of underlying adrenal insufficiency are cutaneous or buccal hyperpigmentation and hypotension. Hyperpigmentation is best observed in areas of pressure, on the buccal mucosa, or on the external genitalia.¹⁴ Instead of hyperpigmentation, vitiligo may be seen in the same areas. The adrenal steroids are important in maintaining normal sexual hair, particularly in women, and decreased sexual hair may be observed quite often in women with Addison's disease. Calcification of the auricular cartilages may be seen in conditions other than Addison's disease, but adrenal insufficiency is the most common non-mechanical cause.¹⁵ Although the ears appear normal to observation, the calcified pinnae are stony hard and inflexible. Calcification in the adrenal gland is a rather specific finding usually indicating an infectious disease of the adrenal glands.

Many laboratory tests are altered when the adrenal glands are destroyed. Hypercalcemia may be present, and the possibility of hypoadrenalism should be entertained when an unexplained elevation of the serum calcium is noted.¹⁶ The combination of azotemia, hyponatremia, hyperkalemia, metabolic acidosis and hypoglycemia should always alert the physician to the possibility of adrenal insufficiency.²

While the secondary physical and laboratory findings should direct the physician to the possibility of primary adrenal insufficiency, the ultimate diagnosis rests upon specific tests of adrenal function. The use of ACTH to demonstrate the failure of the adrenal gland to be stimulated has been well

outlined by Thorn.¹⁷ ACTH may be administered by either the intravenous or intramuscular route, but the latter is preferred because of ease and reproducibility. In order to maximally stimulate the adrenal glands, a minimum of three days of ACTH administration is recommended as outlined in Table 4. Forty units of ACTH-gel² is given intramuscularly every 12 hours for six doses, beginning at 8 a.m., and simultaneously 24 hour urine specimens are collected for 17-hydroxycorticosteroids. A fall or no rise in the 24 hour 17-OHCS excretion indicates primary failure of the adrenal glands; a step-wise rise in urinary steroid metabolites suggests hypopituitarism and warrants further study.¹³

The ACTH stimulation test is not without risk and has resulted in death when performed on Addisonian patients.¹⁸ For this reason it has been suggested that when ACTH is to be administered to patients in whom the suspicion of Addison's disease is high, "protective" doses of corticosteroids be given in hopes of preventing a crisis.¹⁸ 9 α -fluorohydrocortisone and dexamethasone,³ may be given orally in doses of 0.1 to 0.2 mg and 1.0 to 2.0 mg per day respectively and not contribute significantly to the total 24 hour urinary 17-OHCS excretion during the test.

The etiology of the adrenal insufficiency should be as well documented as possible. Skin tests for tuberculosis and for the deep mycoses, radiologic examination and studies to define the presence of associated endocrinopathies should be done early in the evaluation of the patient. Although idiopathic adrenal insufficiency may, as our studies suggest, be evident at an early age, these patients should be followed for their entire life so the occurrence of other endocrine organ failure may be detected early.

The key to successful long term management of the patient with Addison's disease rests upon a combination of appropriate drug therapy and adequate patient education. In general, the authors use cortisone acetate (25 to 37.5 mg per day in divided doses) which in addition to its glucocorticoid effect possesses some salt retaining

Table 5
SUGGESTED STANDARD PROTOCOL FOR THE
ACTH STIMULATION TEST
(D-dexamethasone 0.5 mg orally every 6 hours; F-9 α -
fluorohydrocortisone 0.1 mg orally daily;
ACTH repository gel)

	8 A.M.	8 P.M.	MEDI- CATION
Day 1 Control			
Day 2 Control			
Day 3 ACTH #1	40 u IM	40 u IM	D + F
Day 4 ACTH #2	40 u IM	40 u IM	D + F
Day 5 ACTH #3	40 u IM	40 u IM	D + F

properties. In most cases, 9 α -fluorohydrocortisone, 0.05 to 0.2 mg per day, is necessary to maintain normal water and electrolyte balance. While the patient's well-being certainly is dependent upon the proper medication, he must learn from his physician many important aspects about his condition. Table 5 demonstrates some of these items, but the most important details deserve emphasis. The patient and his family should be aware of the nature of his disease. At all times, he should carry identification and an alert badge from which the medications and the name of his physician may be taken in case of an emergency. He should know that even minor stress will require additional cortisone and that he should automatically increase the dosage for injuries, upper respiratory infections and major illnesses and promptly notify his physician. Any dental or surgical procedure needs to be planned with appropriate increases in steroid doses.

SUMMARY

Thirty-two patients with primary adrenal insufficiency were seen at the University of Oklahoma Medical Center and the Oklahoma City Veterans Administration Hos-

Table 6
GUIDELINES FOR THE EDUCATION OF THE
ADDISONIAN PATIENT

A Check List for Addison's Disease
The Physician Should Teach the Patient and His
Family:

1. The Nature of His Disease
2. To Always Carry Emergency Identification
3. To Carry a Reserve Supply of Medication
4. To Increase Medication and Salt with Stress
5. To Notify His Physician Promptly When Ill
6. To Always Notify His Physician Before Dental Work, Surgery or Anesthesia

pital between 1950 and 1970. Hypotension and hyperpigmentation occurred in more than 80 percent. The original diagnosis was found to be incorrect in 60 percent of the cases. Fifty-six percent of all cases were due to idiopathic atrophy of the adrenal glands, 34 percent to tuberculosis, and ten percent to miscellaneous causes. A second or third primary endocrine organ failure occurred in 33 percent of the idiopathic group and among none of the remainder. The documentation of ACTH-refractory adrenal insufficiency is critical to the diagnosis of Addison's disease. The education of the patient and his family is vital to long term patient management. □

ACKNOWLEDGMENTS

The authors are grateful to J. Darrel Smith, M.D., Professor of Pediatrics and R. Palmer Howard, M.D., Professor of History of Medicine, for much of the clinical material contained in this report and for their helpful guidance during the preparation of the manuscript.

FOOTNOTE

†Certain aspects of these patients have been previously reported from this center: Howard, R. P.: Hypoparathyroidism. University of Oklahoma Medical Center Postgraduate Symposium on Endocrinology of Children and Young Adults, Oklahoma City, Sept. 26, 1962. Taybe, H. and Keele, D.: Hypoparathyroidism: A review of the literature and report of two cases in sisters, one with steatorrhea and intestinal pseudo-obstruction. *Am. J. Roentgen*. 88: 432-442, 1962.

1. 9 α -fluorohydrocorticone, Florinef® acetate, Squibb.
2. ACTH-gel, H.P. (highly purified) Acthar gel,® Armour.
3. Dexamethasone (9 α -fluoro-16 α -methylprednisolone), Decadron,® Merck Sharp and Dohme.

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The Surgical Management of Bell's Palsy

KENNETH A. ROGERS, JR., M.D.

Bell's palsy is a disease of unknown etiology and the efficacy of medical management has not been determined.

Surgical decompression of the facial nerve in the mastoid is necessary in some cases and the timing of surgical intervention can be determined with the use of the facial nerve stimulator.

THE PURPOSE of this paper is to discuss the surgical management of Bell's palsy and to describe the indications. Approximately 85 percent of the cases of this disease will resolve spontaneously. The remainder of these patients can be treated successfully by surgical decompression of the facial nerve if the procedure is undertaken before irreparable damage to the nerve occurs.

Bell's palsy is the sudden occurrence of a lower motor neuron paralysis of the facial nerve in an apparently healthy individual with no history of ear disease or trauma to account for it. Though in his original paper¹ he described cases of traumatic and iatrogenic origin, Charles Bell's name is now given only to those facial paralyses that are idiopathic in nature.

ANATOMY

The facial nerve emerges from the inferior border of the pons to enter the in-

ternal auditory canal along with the auditory nerve. Passing superior to the cochlea the facial nerve bends posteriorly to enter the middle ear (Figure 1). This bend is called the genu and it is at this point that the geniculate ganglion is located. It is from this ganglion that the greater superficial petrosal nerve emerges to supply the parasympathetic stimulation to the lacrimal gland.

From the genu the facial nerve enters the fallopian canal through which it passes horizontally along the medial wall of the middle ear. Just posterior to the stapes and oval window the nerve descends through the mastoid portion of the temporal bone to exit from the stylomastoid foramen after which it divides into its peripheral branches to supply the muscles of the face. As the nerve descends through the mastoid process it gives off the nerve to the stapedius muscle and also the chorda tympani nerve which recrosses the middle ear proceeding forward to supply the taste sensation to the anterior two-thirds of the tongue.

With this knowledge the site of a peripheral lesion causing a facial paralysis can be located. If the lesion were peripheral to the stylomastoid foramen or in the distal descending portion of the nerve the face would be paralyzed but taste and tearing would be normal. If the lesion were in the proximal descending or horizontal portion taste would be decreased but tearing would still be normal. If the lesion were at the geniculate ganglion or more medial both taste and

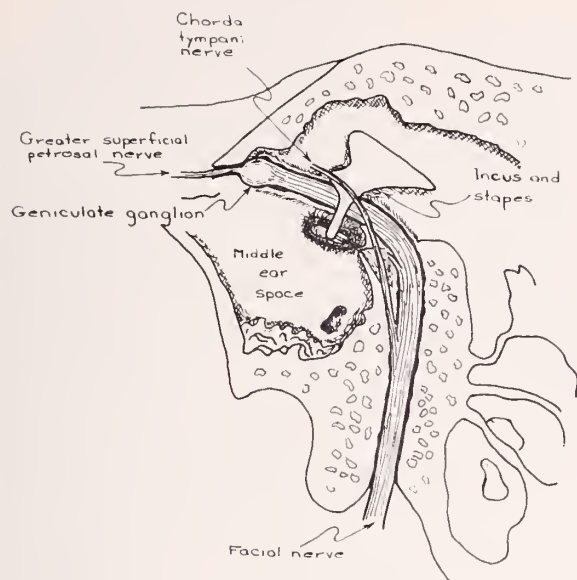


Figure 1. The course of the facial nerve through the middle ear and mastoid.

tearing would be reduced. Hyperacusis might also be present in the more medial lesions due to paralysis of the stapedius muscle. It should be mentioned that facial paralyzes of peripheral origin can be distinguished from those of central origin by examining the movement of the frontalis muscle. Since the fibers to this muscle receive bilateral cortical innervation it would continue to function with a central lesion but not with a peripheral lesion.

PATHOLOGY

The etiology of this disease still remains obscure but most investigators agree that the development of edema along the nerve in the rigid fallopian canal leads to a loss of nerve function. Kettel² feels that vasospasm is the initial event. This leads to ischemia which in turn leads to edema that

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causes pressure within the fallopian canal leading to further ischemia. Sade and Levy³ propose that the disease is due to a viral lower motor neuron paralysis which leads to the edema and thus to the ischemia. Giancarlo and Mattucci⁴ concur with this opinion.

The resultant loss of function of the nerve may be physiological without degeneration of distal nerve fibers (neuropraxia), or there may be degeneration of the axons and myelin sheath without disruption of the neurilemmal sheath (axonotmesis). If ischemia continues there will eventually be complete destruction of all neural elements and resultant fibrous proliferation (neurotmesis). Decompression of the facial nerve is not indicated if the block is purely physiological but when axon degeneration begins this procedure can successfully prevent further tissue damage and restore normal function.

INDICATIONS FOR SURGICAL INTERVENTION

As mentioned above it has been stated that approximately 85 percent of the cases of Bell's palsy recover spontaneously. Hilger,⁵ however, feels that when discriminating standards are applied only 55 percent can be said to have recovered satisfactorily. He does not accept as satisfactory those cases where recovery is only partial or synkinesis is present.

The medical management of this disease includes the use of vasodilating agents, steroids, anticoagulants, diuretics, sedatives and numerous other medications. There have been no well controlled studies to show that any of the above mentioned drugs improve the prognosis of this disease.

Facial nerve decompression for facial paralysis has been advocated for almost forty years since the work of Ballance and Duel⁶ but until recently the timing of surgical intervention has been arbitrary. Though opinions varied the usual practice was to wait for three to four weeks and if there was no sign of recovery decompression was undertaken.

In 1963 Jerome Hilger⁷ reported the development of a facial nerve stimulator that was based on the work of Campbell, *et al.*⁸



Figure 2. The higher facial nerve stimulator.

This compact device (Figure 2) allowed the easy clinical testing of the excitability of the facial nerve to determine its viability. A square wave current is applied to the facial nerve at its exit from the stylomastoid foramen and the intensity of the current is increased until the facial muscles begin to contract. By comparing the normal with the paralyzed side deterioration can be easily detected. Patients can be followed at regular intervals and as long as there is excitability present in the nerve, no matter how long the paralysis continues, spontaneous recovery is assured. If the intensity of the current must be increased at each examination to obtain a response from the facial muscles it is evidence that the nerve is degenerating and surgical intervention is indicated.

Decompression of the facial nerve is done through the mastoid bone by one of several mastoidectomy approaches. Either a post-

auricular or endaural incision may be used. Though the pathology is usually in the descending portion of the nerve as much of the horizontal portion as possible should also be uncovered without disrupting the ossicular chain.

Giancarlo and Mattucci⁴ reported a study recently of 27 patients with Bell's palsy in whom surgical decompression was recommended after studies indicated that the facial nerve was degenerating. Nineteen of these patients underwent surgery and showed a recovery rate of 73 percent. The eight patients who refused surgery showed a 14 percent recovery rate.

SUMMARY

Bell's palsy is the sudden onset of an idiopathic facial paralysis. Eighty-five percent of these cases resolve spontaneously but unless surgical decompression of the facial nerve is undertaken the remaining 15 percent will have persistent deformity. The timing of surgical intervention can be determined by use of the Hilger facial nerve stimulator. □

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An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen and Demulen are indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality conducted in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain^{1,2} leading to this conclusion, and one³ in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll¹ was about sevenfold, while Sartwell and associates² in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Ovulen and Demulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of

them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen or Demulen. Therefore, if such tests are abnormal in a patient taking Ovulen or Demulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen or Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen or Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen or Demulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen or Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function, increased sulfolobomorphthalen retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T³ uptake values, metyrapone test and pregnanediol determination.

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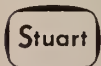
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JOHN M. SCHNEIDER, Ph.D.

Depression is a major problem in patients seeking medical help. Too often it is unrecognized, resulting in frustration of both the patient and the physician.

THIS STUDY examined the following questions: 1) What is the prevalence of depression in the Medical Clinic of the Oklahoma University Medical Center? 2) What characterizes depression in this setting? 3) Do our senior medical students recognize depression and provide for its management?

Many authors stress the significance of depression for the medical practitioner. Kline¹ stated, "More human suffering has resulted from depression than any other single disease." Though the rate of first admission for affective disorders to United States Public Mental Hospitals has declined

steadily in recent years, the problem of depression has in no way diminished. National figures for termination of outpatient psychiatric treatment indicate a rise in the rate of adult depression from 17.7/100,000 in 1961 to 29.8/100,000 in 1965.² Since suicide can be regarded as the mortality in depression it is pertinent to note that it now ranks among the top ten causes of death in the United States. Known suicides number more than 20,000 per year, a rate in 1965 of 11/100,000. Although methods of case finding and definitions vary, epidemiologic studies of general population groups report a prevalence of depression in adults ranging from 3.9 percent (Sorenson and Stromgren's survey of Samsø County, Denmark)³ to 23.9 percent (Midtown Manhattan Study, Langer and Michael).⁴ These and other studies are beautifully reviewed by Silverman.² In a survey of medical inpatients, Schwab⁵, using Beck's Depression Inventory, found 21 percent to be depressed. Such figures emphasize that all physicians must be alert to the manifestations of depression. This investigation was instituted when we noted that senior medical students often failed to recognize depression in their medical clinic patient.

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I. PREVALENCE OF DEPRESSION

METHOD

A quick, simple, self-administered test to measure depression was necessary for this survey. The Zung Short Form Depression Scale (SDS) was selected.^{6*} Scores have correlated well with clinical impressions and the D scale on the MMPI ($R=.70$) in both in- and outpatient psychiatric populations. Zung reported scores for clinically depressed outpatients of 50-78 with a mean of 64 and scores for depressed inpatients of 63-90 with a mean of 74.⁷ Senior medical students were asked to administer the test to all new and return patients for one week periods in November, 1966 and May, 1967, and to all new patients for one week in January, 1967. Four hundred ninety-nine patients were seen during the sample weeks and 295 tests were returned, a 60 percent yield. This represents a 2.2 percent sample of the annual clinic population.

RESULTS

Ninety-five (32 percent) of these test forms were unusable. They were from patients who were blind, illiterate or too ill to cooperate. Of the remaining 200, 95 scored below 50; 105 scored 50 and above. Thirty-six (12 percent) scored 63 and above, thus scoring in the range of psychiatric patients hospitalized for depression.

COMMENTS

The number of patients unable to complete the SDS was startling. The prevalence of depression was even greater than anticipated. Schwab⁵ noted that lower class medical inpatients responded more affirmatively to test items on depression rating scales than did upper class patients. Since our clinic population is largely lower class these high figures may in part reflect this phenomenon. Nonetheless, these figures emphasize the magnitude of the problem of

depression in this medical outpatient population.

II. CHARACTERISTICS OF DEPRESSED MEDICAL OUTPATIENTS

Kline¹ pointed out that the way depression manifests itself is different in various cultures. Numerous studies have reported on the relationship of the occurrence of depression to such factors as age, sex, race, marital status, social class, social and geographic mobility, and early and recent losses. Schwab^{5,8} studied depression in medical inpatients and found that demographic characteristics and symptomatology varied with social class. He reported that his lower class group showed more somatic symptomatology, tended to have more serious medical illness, and was significantly younger than his middle and upper class groups. We attempted to identify demographic, historical or clinical features accessible in a routine medical workup which might be useful in alerting students to the presence of depression in our medical clinic population, a lower socio-economic group referred to the center by physicians throughout our state.

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*Test forms were furnished by Lakeside Laboratories to whom we express our gratitude.

TABLE 1

Factor	De-pressed	Con-trols	X ² or t-value
SEX			
Male	12	16	NS
Female	24	20	
RACE			
White	26	28	NS
Negro	9	6	
Indian	1	2	
AVERAGE AGE			
Male	49.8	45.4	NS
Female	43.9	46.6	NS
MARITAL STATUS			
Married	26	24	NS
Single	3	3	NS
Divorced, Widowed or Separated	6	9	NS
Unknown	1	0	NS
AVERAGE NO. OF SIBLINGS	5.8	5.8	NS
AVERAGE NO. OF OFFSPRING	3.0	3.0	NS
YRS. OF EDUCATION			
Male	6.2	9.2	t=2.18; df=18 p < .05 NS
Female	9.4	10.4	
RELIGION			
Denominations and Catholics	22	27	$\chi^2=2.45$; p < .10
Sects	9	4	
None	5	5	
CHIEF COMPLAINTS			
Number	54	37	t=2.00; df=70 p < .05 $\chi^2=4.80$; df=1 p < .05
Including Pain	18	9	
MEDICAL DIAGNOSES	50	67	NS
DEPRESSIVE SYMPTOMS			
Suicide Threats	4	1	t=2.59; df=70 p < .01
Crying Spells	8	3	
Sleep Disturbance	7	3	
TOTAL	19	7	
SURGICAL PROCEDURES			
None	12	12	NS
Number	60	46	
Range	0-10	0-4	
SYSTEMS REVIEW			
Neuromuscular System	23	12	$\chi^2=6.70$; df=1 p < .01

LOSSES

Early Parental	10	7	NS
Recent Losses (body part or relative in four years)	17	13	NS

AVERAGE NO. OF
CLINIC VISITS

One Year	7.10	6.6	NS
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AVERAGE NO. OF
DIFFERENT CLINICS

One Year	2.14	1.97	NS
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METHOD

Information from the charts of the 36 patients scoring 63 and above on the SDS was compared with that from charts of a control group composed of 36 patients scoring under 50 randomly selected in the same numbers as high scoring patients from each sample week. The average SDS score for the depressed group was 69.0. For the control group it was 41.0.

RESULTS

Comparison of demographic, historical and clinical features of these groups is shown in Table 1.

1) *Demographic Factors*: There were no significant differences between groups in sex or racial distribution, average age or marital status. States of birth were similar for the two groups. The average number of siblings and offspring were the same. Male patients had significantly less education than male controls ($t=2.18$; $df=18$ $p < .05$). Occupations were similar in the two groups. Depressed patients and controls came in approximately equal numbers from each quadrant of the state despite diverse geographic and economic conditions in these areas. The size of communities of residence did not vary significantly. An χ^2 value of 2.45 ($p < .10$) suggests a slight tendency for depressed patients to be more likely to adhere to fundamental religious sects than controls.

2) *Historical and Clinical Factors*: 1. *Chief Complaints* were significantly more numerous in the depressed patient group ($t=2.00$; $df=70$, $p < .05$). The word "pain" and its synonyms (e.g., "aches," "misery") were used in the chief complaint

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by half of the depressed patients but only one-fourth of the controls ($\chi^2=4.8$; $df=1$; $p < .05$). 2. *Medical Diagnoses* were examined for both groups. Though the amount of documented pathology in the control groups was greater than in the depressed, this did not reach significant levels. The types of illness and body system involved were similarly distributed in each group. 3. *Specific symptoms* associated with depression (suicide threats or attempts, crying spells, sleep disturbances) were noted with significantly greater frequency in the depressed patients ($t=2.59$; $df=70$; $p < .01$). 4. *Weight change* was reported by only eight depressed patients and six controls. Depressed patients reported changes from minus forty to plus twenty-five pounds whereas controls varied from minus twenty pounds to plus twenty pounds. 5. *Surgical Procedures* were compared. Although the differences did not reach statistical significance the variance in the depressed patients was four times that of the controls. No control had undergone more than four procedures whereas depressed patients had undergone up to ten. In a patient who has undergone multiple surgeries the possibility of depression should be considered. 6. *Systems Reviews* showed similar numbers of complaints for the head, cardiovascular, respiratory, gastrointestinal and genitourinary systems. Depressed patients, however, complained almost twice as often of musculo-skeletal symptoms (23 vs. 12) ($\chi^2=6.70$; $df=1$; $p < .01$). 7. Both *early* and *recent* losses (real or symbolic) were more frequently recorded for depressed patients, but did not reach statistical significance. 8. The difference between groups in the *average number of clinic visits* and in the *average number of different specialty clinics* attended in the preceding year, while in the expected direction, did not reach statistical significance.

COMMENTS

There were few statistically significant differences discernable from chart information between depressed and control

groups in this medical clinic population. Our findings were similar to Schwab's for medical inpatients, in that age and sex distribution did not differ significantly. However, his lower class group had more unmarried patients, while we were unable to show a relationship between marital status and depression in our outpatients.

Our male patients had significantly less education which may have resulted in increased social stress in their lives. There was a hint that depressed patients were more likely to adhere to sect-type religious groups. The rigid controls over aggressive and sexual impulses demanded by these groups might indeed increase vulnerability to depression. Such factors as geographic or social mobility resulting in loss of environmental support, or size of community of residence with the possibility of urban or rural isolation, did not prove helpful in differentiating the depressed group. Nor could we document differences in size of family of origin as a clue to early deprivations, or in family of procreation as indicative of current demands and responsibilities. Demographic factors proved disappointing as possible ways of alerting students to the presence of depression. It is ubiquitous in this population.

Historical and clinical factors, as recorded in the usual medical work-ups, were somewhat more helpful. The sheer number of chief complaints and the use of pain as a descriptive term were notable. Patients coming to our medical clinic have predominantly chronic illnesses. Non-depressed patients more often complained of symptoms other than pain, or even indicated they were in for "follow-up." The depressed patients in this social class may well be expressing their psychic pain symbolically or they may be manifesting more psychophysiological reactions resulting in pain. Schwab⁸ noted that his lower class patients complained of more somatic symptomatology. Beck⁹ observed that pain may often be the chief focus of a depressed patient's complaints. The depressed patients had had no more physically diagnosable illness, yet they more often had had multiple surgical procedures, which is consistent with Engle's observation¹⁰ that pain-prone patients solicit from

physicians further pain in the form of surgery or diagnostic procedures. It was with this possibility in mind that we examined the number of clinic visits and the number of different specialty clinics attended in a year, anticipating both might be greater for the depressed group. Though the differences were in the expected direction, they did not reach a significant level. Depressed patients were more apt to volunteer neuromuscular complaints under System Review, perhaps indicative of the bodily tension under which they operate. It was expected that typical depressive symptoms would be more frequently documented in the depressed group and this was borne out. However, their frequency was so low that we wonder whether this aspect of history-taking is sufficiently emphasized. Sleep habits should be a recorded part of any medical history, yet we were unable to find any comment regarding sleep patterns in two-thirds of the charts. Questions about crying spells and suicidal thoughts could also offer useful clues. In view of the prevalence of depression in medical populations, specific questions relevant to this syndrome may need to be part of routine history-taking.

III. RECOGNITION OF DEPRESSION

Although the lower class patients in Schwab's⁵ study scored in the depressed range more frequently and had higher average scores than upper class patients, interview ratings by the investigators showed no significant differences in frequency by social class. Nonetheless, Schwab reported that the medical staff recognized 32 percent of upper class depressed patients but only eight percent of depressed lower class patients as depressed.

METHOD

Comparisons based on data in medical student histories were made between the same 36 patients and 36 controls described above. In addition, comparisons were made between recognized and unrecognized depressed patients.

TABLE 2

DESCRIBED AS	DEPRESSED		CONTROLS	
DEPRESSED	15	42%	5	14%
MALE	2	17%	2	12%
FEMALE	13	54%	3	15%

$$\chi^2=4.60; df=1; p < .05$$

RESULTS

(Table 2) Fifteen of the 36 depressed patients (42 percent) were described by the students as depressed; six (16 percent) were so diagnosed. Five controls were described as depressed but none were so diagnosed. Depression was correctly recognized significantly more often in females. Eleven females and ten males were unrecognized, whereas 13 females and two males were recognized ($\chi^2=4.6$; $df=1$; $p < .05$). The average scores on the SDS were 69.4 to recognized depressed patients and 69.7 for unrecognized, not significantly different. Only seven of the 36 depressed patients were directed toward psychiatric treatment. Ideally, many of the remaining 29 might have been managed in the Medical Clinic, but 21 of these were unrecognized and in the remainder there was no record of treatment beyond the occasional use of Librium® and Equanil®.

COMMENTS

Schwab⁵ has shown that physicians recognize depression less often in patients from lower socio-economic backgrounds than from middle and upper class backgrounds. He has also pointed out that these patients are the very ones who complain of more somatic symptoms and thereby find their way to medical rather than psychiatric settings. Our students in the Medical Clinic likewise do not recognize the mood of depression, especially in male patients, nor do they appreciate its significance in their patient's illnesses. They become sidetracked by somatic complaints and fail to ask about specific depressive symptomatology. All too often, the pertinent social and psychological factors in the patient's life are completely unknown. Not only is appropriate treatment denied to many patients but also

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inappropriate and excessive medical and/or surgical procedures are undertaken. The resulting frustration of patients and physicians further compound the problem.

CONCLUSIONS

1) In our Medical Clinic 33 percent of the patients scored in the depressed range on the SDS, 12 percent scoring as high as depressed patients requiring psychiatric hospitalization.

2) Demographic factors were not helpful in differentiating depressed patients. Only in regard to level of education and possibly adherence to fundamental religious sects were there differences. Historical and clinical features of the usual medical student work-up which differentiated the depressed group were the number of chief complaints, the complaint of pain, the report of multiple surgical procedures, the frequency of neuromuscular complaints, and of specific depressive symptomatology (suicide threats or attempts, crying spells and sleep disturbances).

3) Less than half of these severely depressed patients were recognized and only 16 percent were specifically diagnosed by senior medical students. Women were more often recognized than men as depressed. Definitive treatment was planned for only 16 percent of the group.

A major teaching goal must be to help

students recognize depression as an integral part of illness in their patients. Identifying those features which help discriminate between depressed and non-depressed groups in this lower class medical population should aid in correct diagnosis. Emphasizing areas which can be added to the usual medical work-up to provide leads will also be helpful. Concern with making a correct diagnosis of depression may be encouraged if students regard it as a treatable condition. Too often the prevailing attitude is "We can't do anything about it anyway." The fundamentals of diagnosing and managing this syndrome need to be a part of the armamentarium of every physician who hopes to provide adequate and appropriate care for his patients. □

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ORIENT VENTURE TOUR

The OSMA-sponsored tour to Tokyo and Hong Kong is now completely filled. A waiting list is being maintained in the event there are cancellations.

Persons wishing to have their names placed on the waiting list, or wishing to cancel their reservations, should contact Mrs. Jeanette Saunders at the OSMA office immediately.

Historical Perspectives of Psychosomatic Medicine

STEWART WOLF, M.D.

*An informal account of the development
of psychosomatic concepts from the
mists of antiquity to understandable
aspects of medical science and
medical practice.*

THANK YOU, Palmer, and friends. It is redundant, I know, to say what it does to me to be back in the midst of this group. So I won't try to say it, but I know that you know I feel it. To see in this audience my distinguished predecessor as chairman of the Department of Medicine, Doctor R. Q. Goodwin, is an extra satisfaction. I was reminded as I saw Doctor Palmer Howard up here at the podium that when we, Doc-

tor Robert Bird and I, first got to Oklahoma, the first medical presentation we had was one that Doctor Howard gave in the downstairs cafeteria of the hospital on pituitary insufficiency. That was, I think, my first memory, which would have been about May of 1952.

This story, "Historical Perspectives in Psychosomatic Medicine," could be told in many ways. There is really no beginning, no middle part, and there is certainly no end. Man has for aeons been aware to a greater or lesser extent of the relationship between his response to his life experiences and the functions of the organs in his body. Certainly, the association of emotion and bodily function must have been obvious to the first human who was scared by a mastodon and had to change his loin clout. It is the conceptual problem surrounding the association that has been the bugbear, and has at times slowed up the progress of understanding or, if you will, the progress of science. I hasten to say that I cannot claim

History of Medicine lecture presented while Visiting Professor of Medicine at the University of Oklahoma Medical Center on February 16th, 1971.

any scholarship in this area and I can only reflect to you what I have learned over several years of, you might say, hanging around with the subject itself.

It may surprise some of you that one of the early exponents of psychosomatic medicine, at least early in terms of western history, was Cicero, who stated boldly that bodily ailments could be the result of emotional factors. Hence, Cicero must be considered an early psychosomatist. He objected to the "black bile" concept of Hippocrates, and spoke of the psychological causation of melancholia: "What we call furor they called melancholia, as if the reason were affected only by a black bile, and not disturbed as often by a violent rage, or fear, or grief." The difficulty with the conceptual side lay in this mind-body dilemma that cropped up among philosophers and natural scientists from time to time. Very often, in desperation or frustration, it was swept under the rug by the scientific establishment. For example, because pain appeared to be a "passion of the soul," Aristotle did not include it among the sensations. He listed only five: vision, hearing, taste, smell, and touch. Plato, of course, felt that the mind ruled the body but he could not provide a satisfactory answer to the question, "Where is the mind?" Hippocrates, as I just mentioned in relation to Cicero, believed that psychological processes are merely reflections of bodily processes. His idea has cropped up over and over again up to modern times. The most recent and persuasive evidence of the Hippocratic point of view comes from the sort of experiments in which a person, injected with a substance such as epinephrine, becomes anxious. It is concluded that anxiety is due to the epinephrine, rather than the other way around. Other investigators find epinephrine secreted in response to an anxiety producing situation.

So, as I say, there is really no clearcut punctuation of progress in understanding psychosomatic medicine. One could pick out periods and people in history such as Thomas Willis, for example. Willis in 1650 discovered the glycosuria of diabetes mellitus,

and in those days before the clinitest they tasted the urine. He found it sweet and said, "This is diabetes and it is caused by prolonged grief." This kind of conviction, as I say, cropped up over and over again among some of the most distinguished scientists in medicine. A hundred years after Thomas Willis, in 1750 or thereabouts, there is a very famous story which I am sure every one of you is familiar with, of John Hunter with angina, saying, "my life is in the hands of any rascal who chooses to annoy and tease me."

Yet, every time an effort was made to systematize this type of study, there developed the dilemma—what is the mind, where is it, how do you know it's all that important? I suppose that the lines of battle, you might say, were drawn somewhere around the time of Francois Magendie, who was one of the earlier sweepers under the rug. Magendie stated categorically that matters of the spirit are entirely separate from matters of biology, physiology, organs, and organ structured function. One reason why Magendie felt the great need to sweep emotions under the rug, and why his point of view stuck for a while, was the prevailing concern with the idea of vitalism—vital force—as opposed to mechanism. To the mechanistic people, vital force seemed impossibly elusive. It seemed so religious in many ways, that people simply could not get a perspective on mind, spirit and emotions and begin a systematic approach. The alternative was to sweep the whole mess under the rug.

It is interesting that one of Magendie's star students was Claude Bernard, whose work with the nervous system got us onto the road of systematizing psychosomatic physiology. Bernard produced diabetes by interfering with the nervous system in his famous experiment of the piqure of the fourth ventricle. He did not exactly confirm Willis, but he certainly took a road quite different from that of Magendie. This was in 1849. It is interesting that ten years later one of the great scientific giants of medicine and biology, Louis Pasteur, felt called upon to make a gratuitous remark; namely, that matters concerning the emotions do not lend themselves to scientific

inquiry. This was in 1860, when he was inducted into the French Academy. The oracle had spoken!

Such a tendency to be categorical—dogmatic—may be characteristic in the older years of some of the greatest geniuses. Charles Richet, who is someone with whom I have some familiarity, worked very hard on developing an airplane. He just missed having the first practical airplane. He was aced by the Wright brothers by just a matter of months. Fifty years ago he said:

Never, never will we be able to leave our earth. Ingenious dreamers have supposed that by certain powerful machines, huge projectiles containing men could be flung into space beyond the limits of gravity to reach the moon or one of the planets of the solar system. Let us resign ourselves. The rock does not expect to walk on the waves. The tree in the forest does not lament because he cannot gambol across the fields with the leaves and the seed pods. So man should not be more ambitious because like the rock on the mountain and the tree in the forest he is also tightly adherent to the earth.

A strange statement from a man who had been a pioneer in aviation!

I could give many examples of this kind of thing, but it takes us away from the subject, and I wanted particularly to emphasize Pasteur's remark with respect to matters involving the emotions. It was 1892, thirty-two years after Pasteur's prediction, that psychosomatic research, as an aspect of science, was really established by experimental work and systematization. William Wundt worked with the visceral changes associated with alterations in life experience and emotional state. He made observations on hypnosis and developed what is now called psychophysiology. The fellow who turned medicine on to hypnosis was none other than our friend Charles Richet. Richet, as an intern at one of the hospitals in Paris, had a patient, a 16-year-old girl, with an hysterical illness. In his article, which is delightful, he spends the first four pages apologizing for undertaking any such thing as hypnosis, and excusing it on the basis that although necromancy is very bad business, he was awfully curious. Richet hypnotized the girl and thus eliminated her symptoms. He did this repeatedly, but her symptoms eventually recurred after each hyp-

nosis. As he rotated around the hospitals of Paris, he went to the Salpêtrière, which of course was where Jean Louis Martin Charcot was. Richet interested Charcot in the medical and scientific potential of hypnosis. Wundt also learned about Richet's work and systematically studied hypnosis in relation to governing bodily functions and, in doing so, put psychophysiology on the map.

You will forgive me if I go back to Richet from time to time because Richet also anticipated Pavlov in his discovery of the psychic phase of gastric secretion. When Richet was a medical student vacationing in Egypt, he was offered a unique opportunity. His father, Alfred Richet, was professor of surgery at the University of Paris. The elder Richet's righthand man was a young surgeon named Verneuil. Verneuil saw an opportunity to get "brownie points" from the old man. He had made a gastros-

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tomy on a patient who had a stricture of the esophagus from swallowing lye. The patient, Marcellin, came through the operation very well, and there he was with a gastric fistula. Verneuil wrote to young Charles Richet and suggested that he come home and study such an ideal experimental subject. Charles Richet did so, and wrote a thesis for graduation from medical school on the sensibility of the stomach, an elegant study of the stomach's ability to appreciate sensations of various sorts. Then he wrote his doctorate thesis for the "docteur es science," as it is called in France—which is the same as Ph.D—on the composition of the gastric juice. He concluded with even stronger evidence than his predecessor, William Prout, that the stomach, indeed, secreted hydrochloric acid. In the course of these studies, he observed that each time he approached Marcellin with food his gastric juice would flow. Here he was in a position similar to that of those who had looked at old petri dishes before Sir Alexander Fleming made his observation. Fleming just saw what other people had seen, but it meant something to him. To Richet, the "psychic" gastric secretion did not mean anything, so he did not report it; the observation only turns up in his memoirs. Very shortly after Richet's unpublished observation, Pavlov took the prize which had been there all the time.

Later, in 1913, Charles Richet won the Nobel Prize for the discovery of anaphylaxis because on that occasion he did have a prepared mind. The discoverer, the creator, is somebody who recognizes a relationship in nature that other people can see but cannot appreciate. Actually, the observation of sudden death following the second injection of a substance was first made by Magendie; it was made later by Theobald Smith in this country, but neither of them made anything of it. Richet systematized this observation and extracted the significance of a second injection of a material which, on the first injection, was innocuous. One of Richet's friends and associates was an American named Victor Vaughan, whose son John Vaughan is a professor of medicine at the

University of Rochester. Victor Vaughan apparently encountered anaphylaxis before Richet, but he failed to report it promptly. The story is in a little memento of recollections that Vaughan wrote about his own life: "I was able to acquire some guinea pigs at a very cheap figure from a company that was making serum, because the company had found out that when they reinjected their guinea pigs with horse serum they all died. Therefore, they sold them to me cheaply for other kinds of experimentation." There was the phenomenon lying right in Vaughan's lap. When nature is trying to tell you something, you had better listen!

Pavlov's interest in psychosomatic medicine began when his experiments went awry. Instead of saying, "Oh, well, it didn't work," he said, "Nature is trying to tell me something, if I'll only listen." Pavlov had several dogs that had been well conditioned [with respect to their salivary flow and other things at a time] when there occurred a big flood where the dogs were locked up. It was a frantic, horrendous situation, although they managed to rescue most of the dogs. Following this, the dogs had lost their conditioning. Pavlov pursued this observation and from it he developed his story about the temperament of dogs; namely, that dogs are susceptible to this or that kind of neurosis, depending on their stock, their breed. Pavlov, who developed a rather fancy theory of neurosis, did not communicate with his contemporary, Sigmund Freud, who made enormous contributions to the understanding of psychosomatic medicine and to the sweeping away of the old troublesome mind-shyness. Freud did much to overcome the difficulty of reaching some kind of a confrontation with the body-mind dilemma.

Another major contributor to the systemization of, and to development of the scientific yield of psychosomatic phenomena, was Walter Cannon. Working mainly with dogs and cats, he discovered the G-I Series. In the process of putting radio-opaque material into his animals and drawing pictures of what he saw, he got very bad burns of the hands which incapacitated him to some extent later on in his life. Cannon observed radiographically the altered behavior of the

gut as he exposed his animals to a variety of threats.

Over the past fifty years there has been a rapid increase in knowledge about what the brain can do to the behavior of the organs in response to experiences of one sort or another. A modern dilemma has been, "why does one person who is put in a difficult spot develop peptic ulcer; and somebody else, hypertension; and somebody else, ulcerative colitis; and somebody else, eczema; and somebody else, alcoholism?" Franz Alexander proposed that the nature of the emotional conflict was reflected in the bodily change. Another group spoke of the *locus minoris resistentiae*. It is fun to say that, and it carries conviction because it is in Latin. The implication is that the organ gets sick as part of an individual's attempt to adapt to people and events in his life, because it is a weak organ; it is an area of least resistance. There are lots of arguments against that idea; the glass arm of a baseball pitcher, calcification of the supraspinatus ligament, is a functional disease but certainly not due to *locus minoris resistentiae*. The excessive secretion of hydrochloric acid in a patient with peptic ulcer certainly does not reflect a weak organ, but an unduly strong and active one.

One thing is clear; namely, that our human computers that control visceral function are programmed by our life experiences. I think it was Lucretius who said, "I am a part of all that I have seen." That may be true, but I think our point here is that "all that I have seen is a part of me." Such environmental effects, especially on the young, were considered by many to be so crucial that heritable traits or tendencies were held to be unimportant.

A group of investigators in Arkansas, Murphree, Dykman, and Peters, adduced strong evidence that dogs of the same breed could be further bred for temperament; one very friendly, and the other very shy and suspicious. They found that the offspring of the shy and suspicious ones were uniformly shy and suspicious after they had gotten through a few generations, but the friendly ones were uniformly friendly. Whenever anybody came into the laboratory and saw the contrast of these dogs, he would

say, "Well, you have obviously been mistreating those dogs that are shy and suspicious, or your man comes in late at night and beats them, or something like that." They said, "No, actually what we have done is to mollicoddle the shy and suspicious ones when they were tiny puppies, and ignore the friendly ones; nevertheless, they turn out like this." Even putting the shy and suspicious ones with a friendly mother to nurse failed to block the development of a shy, suspicious temperament. Thus, the mother-child relationship, so holy to the psychiatrically inclined, could not make the difference in the face of strong genetic forces. This does not mean, of course, that the maternal-child relationship is not important. It does not mean that playing with dogs when they are tiny little puppies is not important in developing a friendly disposition, but it does say that the genetic factor weighs heavily in the equation. This was a very important step along the line of our understanding what you might call the "style of behavior," a concept preferred by Harold Wolff, who considered that the style of behavior of the individual as a whole, or of his organs, reflected, against the background of inheritance and experience, his goals and his view of the problem. Therefore, in the same situation one person may cry, another may laugh, while another becomes angry, each with the appropriate visceral accompaniments. We know from general experience that a very cautious person, when cornered, becomes more cautious and, ultimately, unable to make a decision. Whereas, another type of person, the gambler, behaves in the opposite fashion. When cornered, he becomes even more reckless. The fighter fights, the drinker drinks, and the flee-er flees.

The style of general behavior (skeletal muscle behavior) should not be thought of in a different framework from the style of visceral behavior. At one time it was thought that the visceral nervous system was a peripheral nervous system, which was not involved in the highest integrative area of the brain, the frontal cortex. Neurophysiologists since have discovered that it is, and have nailed this down very clearly. The connections of the visceral nervous sys-

tem go as high as those that move the right arm. When Charles Sherrington was deciding to become the father of neurophysiology he elected to work on the somatic nervous system because, as he told his colleagues, there are fewer contingencies between input and output in the somatic than in the autonomic nervous system. This recognizes at once that the control of the viscera is at least as elaborate and sophisticated as the control of skeletal muscles; the kidney being just as dignified a structure as the biceps. When one sweeps away the idea that visceral behavior is categorically different from skeletal muscle behavior, so-called general behavior—when one gets rid of the blinding confusion and sees behavior

as behavior—then the “choice” of a psychosomatic disorder, asthma, ulcer, or hypertension, becomes an aspect of life style and the continuing controversy seems just about as irrelevant as the old mind-body dilemma. □

ACKNOWLEDGMENTS

The audio tape of this lecture was provided through the courtesy of Doctor James W. Woods, Director of Multidisciplinary Laboratories, University of Oklahoma Medical Center. Gratitude is also due Mrs. Erma McKee, History of Medicine Division, for preparation of the manuscript.

The Marine Biomedical Institute, 200 University Boulevard, Galveston, Texas 77550.

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Social Security Amendments Approved By House

In late June the House of Representatives approved the Social Security Amendments of 1971 (Medicare and Medicaid changes) and sent the massive health bill to the Senate for consideration. Hearings on the bill before the Senate Finance Committee are expected to start in mid-July.

Senator Russell Long (D-La.) doesn't plan to spend much time "hearing repetitious testimony." Long said in a statement from the Senate floor that most sections of the bill dealing with Medicare and Medicaid are the same as those in a similar bill which passed the Senate last year. He pointed out that many people will want to testify on the Welfare section of the bill and predicts that hearings are likely to continue into September. Committee deliberations, the final Senate vote and a House-Senate conference to resolve any differences would come after that. Final enactment of the legislation will not come until late October or early November at the earliest.

As adopted by the House, the bill concerns itself with the implementation of the administration's Health Maintenance Organization option for Medicare beneficiaries, restricts physician's fee increases under the federal programs, reduces some long-term Medicare benefits, and covers under Medicare for the first time disabled social security beneficiaries.

The Secretary of HEW would also be authorized to conduct experiments with areawide or community-wide peer review, utilization review, and medical review mechanisms.

Congress failed to pass substantially the same bill during the last session due to major differences between the House and Senate versions and the lack of time to reach agreement.

Medicare beneficiaries would be permitted to have all covered care provided by a Health Maintenance Organization (HMO), defined as a

prepaid group health or other capitation plan, with the government reimbursing the HMOs at 95 percent of the average cost of Medicare beneficiaries in the area.

Physician's Medicare fees would be pegged at the 75th percentile of actual charges in a locality and future increases would be tied to a special index reflecting rising costs. The Department of Health, Education and Welfare would terminate payments to providers found guilty of program abuses.

Other features of the proposed legislation:

—HEW would be required to develop experiments and demonstration projects designed to test payment to providers of services on a prospective basis under the Medicare, Medicaid, and Maternal and Child Health Programs.

—Limits on institutional provider costs to be recognized as reasonable under Medicare would be imposed based on comparisons of the costs of covered services by various classes of providers in the same geographical area.

—Medicare would pay for the services of teaching physicians on the basis of reasonable costs, rather than fee for service charges, unless a bonafide private patient relationship had been established or the hospital had, in the two-year period ending in 1967, and subsequently customarily charged all patients and collected from at least 50 percent of patients on a fee-for-service basis. Medicare payments would also be authorized on a cost basis for services provided to hospitals by the staff of certain medical schools.

—HEW would be authorized to establish minimum periods of time (by medical condition) after hospitalization during which a patient would be presumed, for payment purposes, to require extended care level of services in an extended care facility. The attending physician would certify to the condition and related need for the services. A similar provision would apply to post hospital home health services.

—Present penalty provisions relating to the making of a false statement or a representation by a pro-

OSMA JOURNAL/news

vider of a material fact in any application for Medicare payments would be broadened to include the soliciting, offering, or acceptance of kickbacks or bribes, including the rebating of a portion of a fee or a charge for a patient referral. The penalty for such acts, as well as for the acts currently subject to penalty under Medicare, would be imprisonment up to one year, a fine of \$10,000 or both. Similar penalty provisions would apply under Medicaid.

—HEW would conduct a two-year study of the desirability of covering chiropractor's services under Medicare.

The bill allows the HEW Secretary to authorize experiments with methods of Medicare reimbursement or payment, "with areawide or community-wide peer review, utilization review, and medical review mechanisms," and with performance incentives for intermediaries and carriers.

Another section of the catchall bill of wide public interest would establish a new family assistance welfare plan. The bill also increases social security case benefits and taxes. □

OSMA Orient Tour Full

Physicians and their families from Oklahoma and Kansas have filled the OSMA sponsored Orient Adventure Tour scheduled for October of this year. The two-week tour, with stops in Tokyo and Hong Kong, has proved to be popular.

A waiting list is being maintained in the OSMA office in case there are cancellations before the tour leaves, October 17th.

The tour is jointly sponsored by the Oklahoma State Medical Association and the Sedgwick County, Kansas Medical Society. It features luxury travel by chartered jet aircraft and accommodations in the finest hotels.

Physicians interested in having their names placed on the waiting list should contact the OSMA. □



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IRS Reports on Health Care Providers

An Internal Revenue Service survey of 8,400 health care providers . . . M.D.s, D.O.s, and Dentists . . . who participated during 1968 in Medicare and Medicaid reveal that 83 percent reported their receipts correctly.

Fifteen percent of all tax payers in the study under reported receipts by an average of \$7,700, according to the IRS. Two percent of the tax payers over reported by an average of \$16,000.

Some 15,000 providers were involved in the study, which was based in the main on providers of care who as individuals received \$25,000 or more from federal programs. The 8,400 studied in detail were selected by a "scientific sampling process," the IRS said.

Of the 8,000 cases only 47 cases have been referred to the Intelligence Division of the IRS for preliminary or full scale tax fraud investigation.

A spokesman for the IRS pointed out that the statistics and percentages revealed in their study do not necessarily hold true for the entire health care profession and that no attempt should be made to generalize these findings to all physicians and dentists. ☐

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Alumni Honor Graduating Seniors



Elmer Ridgeway, M.D., president of the Alumni Association of the University of Oklahoma School of Medicine, and Mrs. Ridgeway welcome Doctor and Mrs. Charles F. Bethea Jr., left, to the alumni's traditional commencement eve honoring house for seniors held June 5th at Faculty House. Mrs. Ridgeway pins a "wise old owl" graduating senior badge to Doctor Bethea's lapel. Doctor Bethea, of Bartlesville, was class president and recipient of the coveted L. J. Moorman Award for scholarly attitude in medicine. He is interning at Duke Medical Center, Durham, N. C. ☐

DEATHS

WILLIAM L. BONHAM, M.D.

1900-1971

Oklahoma City, Otolaryngologist, William L. Bonham, M.D., died June 9th, 1971. A native of Kansas City, Doctor Bonham graduated from the University of Michigan Medical School in 1926. Following residency training, he came to Oklahoma City to establish his practice. He became an Associate Professor in Otolaryngology at the University of Oklahoma Medical Center.

Doctor Bonham was certified by the American Board of Otolaryngology, a member of the American College of Surgeons, the American Academy of Otolaryngologists and the American Academy of Ophthalmologists.

CLYDE F. LOY, M.D.

1889-1971

Retired, Oklahoma City otolaryngologist, Clyde F. Loy, M.D., died June 16th, 1971. A native of Effingham, Illinois, Doctor Loy received his medical degree from the University of Louisville School of Medicine in 1916. He established his practice in Oklahoma City in 1930 following practice in Long Beach, California. For many years he was affiliated with the Veterans Administration and the Oklahoma State Welfare Department.

The OSMA honored Doctor Loy in 1959 with the presentation of an Honorary-Life Membership.

ALFRED H. BUNGARDT, M.D.

1874-1971

Alfred H. Bungardt, Sr., M.D., retired Cordell physician and father of Alfred H. Bungardt, M.D., Tulsa orthopedic surgeon, died June 22nd, 1971. Born in Kansas City, Missouri, Doctor Bungardt graduated from the University Medical College of Kansas City in 1902. Following 62 years of active practice, he retired in 1964.

The OSMA presented Doctor Bungardt with a Life Membership in 1955 for his long years of service to the profession and humanity. ☐

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Amphetamines To Be Reclassified As Narcotics

Amphetamines, currently classified as controlled dangerous substances, may be reclassified by the Justice Department and placed in the same category as so-called hard narcotics. A crackdown on the widespread abuse of "pep pills" would require that amphetamines and methamphetamines fall into the category of non-refillable prescription.

The proposed reclassification by the Justice Department would regulate amphetamines and methamphetamines as narcotic substances such as morphine, codeine, and opium and declare that they carry a potential for "severe psychological dependence" with "serious danger" to the abusers.

Manufacturing quotas geared to estimated legitimate use and the filling by manufacturers of order forms would be required. At least one major manufacturer has endorsed the proposal already.

Some lawmakers have complained that the Justice Department did not go far enough and that the order should have included phenmetrazine (Preludin) and methylphenidate (Ritalin).

In the event the Justice Department is successful in reclassifying amphetamines and methamphetamines it will be necessary for physicians to maintain the same type of inventory and order forms for them that are now required for the Schedule II (Class A narcotics) dangerous drugs. □

Kennedy Circus

A cross country tour, described as "Kennedy's Circus," has been completed by Senator Edward Kennedy (D-Mass.). Purpose of the tour was to conduct "hearings" on national health legislation for his Senate Health Subcommittee—which has no jurisdiction over national health legislation.

Kennedy stated that his hearings turned up a health crisis "that cries out for relief."

Other, more objective opinions,

Doctor Etter Honored



Forrest S. Etter, M.D., Bartlesville physician, (left above) was honored recently when the OSMA presented him with a Fifty-Year Pin in recognition of his years of service to his profession. Shown presenting the pin to Doctor Etter is Hillard E. Denyer, M.D., Bartlesville, OSMA Past-President. The presentation was made at the regular meeting of the Washington-Nowata County Medical Society, May 29th, 1971 at the Hillcrest Country Club in Bartlesville. □

came from newspapers in the cities where his hearings were conducted. *The Los Angeles Times* said that Kennedy "held a one-man hearing in Los Angeles the other day on his plan for universal medical insurance. He made it clear he was willing to listen to the views of almost everyone except doctors. He offered the Los Angeles County Medical Association ten minutes for its opinions on his complicated and expensive plan . . . he offered the Orange County Medical Association no time at all. (Both associations therefore boycotted the hearings.) The only witnesses he did hear were critical of the cost, quality and availability of medical care. These are matters of legitimate complaint and concern. But Kennedy's cavalier attitude toward qualified spokesmen for organized medicine who have an equal right to be heard contrib-

uted neither to the allusidation of a complex problem nor to the confidence in the way the Senator goes about his work."

The San Francisco Examiner said: "The shortcomings in such investigations are that dissatisfied witnesses are far more likely to appear than persons content with the medical care they are receiving. The ensuing picture becomes distorted . . . in improving medical care for the few, let us not degrade the medical care for the many. Such is the danger of a national health service, however much it might be touted as a panacea. Senator Kennedy and his committee should not allow the adverse nature of the testimony that gravitates to the hearing rooms to obscure those many favorable aspects of American health care. Sound legislation can be based only on the whole truth." □

DuVal Named Assistant Secretary of HEW

Onetime Oklahoma Doctor Merlin K. DuVal has been named by President Nixon as Assistant Secretary of Health and Scientific Affairs for the Department of Health, Education and Welfare. He succeeds Roger Egeberg, M.D., who remains a consultant on health at the White House and as a Special Assistant to the HEW Secretary.

DuVal, 48, was a member of the University of Oklahoma School of Medicine faculty from 1957 to 1964, when he resigned to become dean of the new University of Arizona Medical School which was then in the process of development. He is currently a member of the AMA's Committee on Undergraduate Medical Education and the Liaison Committee on Medical Education. After his appointment AMA President Walter Bornemeier, M.D., said the AMA "enthusiastically endorses" his selection.

At the time of his resignation from OU, Doctor DuVal had served nearly two years as Assistant Director of the OU Medical Center and also was



MERLIN K. DUVAL, M.D.

Professor and Vice-Chairman of the Department of Surgery.

A 1946 graduate of the Cornell University's Medical College, he came to Oklahoma from the State University of New York College of Medicine, Brooklyn, where he taught in the surgery department for three years.

He conducted extensive research while in Oklahoma in the areas of gastric physiology, the pancreas, and chronic pancreatitis.

He is a past-president of the Oklahoma Surgical Association and was active in many national surgical organizations. Memberships include Alpha Omega Alpha, honorary medical society. Active in community and civic affairs in Oklahoma City, Doctor DuVal served on the Board of Directors of the Oklahoma City Chamber of Commerce, was a member of the Governor's Commission for Higher Education and was a founding member of Oklahoma City's Association for Responsible Government. □

Miscellaneous Advertisements

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OSMA Honors E. O. Martin, M.D.



Local physicians gathered at a special luncheon meeting at Cushing Municipal Hospital on June 21st when the Oklahoma State Medical Association presented E. O. Martin, M.D., with a Fifty-Year Pin.

David Bickham, OSMA Associate Executive Director (right, above) is shown handing Doctor Martin a citation from OSMA President, Lucien M. Pascucci, M.D. □

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Orenzyme[®] Bitabs One tablet q.i.d.

Trypsin: 100,000 N.F. Units, Chymotrypsin: 8,000 N.F. Units;
equivalent in tryptic activity to 40 mg. of N.F. trypsin

**Reduces swelling
Hastens healing
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One tablet q.i.d.

Indications: When used as adjunctive therapy for the rapid resolution of inflammation and edema, good results have been obtained in:

☐ Accidental Trauma ☐ Postoperative Tissue Reactions.
Other conventional measures of treatment should be used as indicated. In infection, appropriate anti-infective therapy should be given.

Contraindications: ORENZYME BITABS should not be given to patients with a known sensitivity to trypsin or chymotrypsin.

Precautions: It should be used with caution in patients with abnormality of the blood clotting mechanism such as hemophilia, or with severe hepatic or renal disease. Safe use in pregnancy has not been established.

Adverse Reactions: Adverse reactions with ORENZYME have been reported infrequently. Reports include allergic manifestations (rash, urticaria, itching), gastrointestinal upset and increased speed of dissolution of animal-origin surgical sutures. There have been isolated reports of anaphylactic shock, albuminuria and hematuria. Increased tendency to bleed has also been reported but, in controlled studies, it has been seen with equal incidence in placebo-treated groups. (See Precautions.) It is recommended that if side effects occur medication be discontinued.

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Call it what you will, it may be premalignant.

Before

3/29/67 Before therapy with 5%-FU cream. Patient P. T. shows a moderately severe solar keratotic involvement. Note residual scarring from the previous cryosurgical and electrosurgical procedures on forehead and ridge of nose adjacent to periauricular area.

After

6/12/67 Seven weeks after cessation of therapy. Reactions have subsided. Residual scarring is not seen except for that due to prior surgery. Inflammation has disappeared and face is clear of keratotic lesions.





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and Efudex® (fluorouracil) 5% cream can resolve it.

Call it actinic, solar or senile keratoses,
many regard it as "precancerous."^{1,2}

Topical fluorouracil, considered by some dermatologists to be a major advance in the treatment of multiple solar keratoses,^{3,4} offers the physician a relatively inexpensive alternative to cryosurgery, electrodesiccation and cold knife surgery. Of the topical fluorouracils available, only Efudex offers 2% and 5% solution and 5% cream formulations—formulations that have proved effective in the treatment of these multiple lesions.

Usual duration of therapy, 2 to 4 weeks.

Studies showed that with the 2% and 5% Efudex preparations, the usual duration of therapy was only 2 to 4 weeks.⁵ Other studies with topical fluorouracil revealed that when concentrations of less than 2% were used, significant numbers of lesions recurred.⁶

Treats the lesions you can't see, too.

Numerous lesions, not apparent prior to 2% and 5% Efudex therapy, manifested themselves by definite reactions, while intervening skin remained relatively unaffected.⁵ The early eradication of these subclinical lesions (which may otherwise have undergone further progression) probably accounts for the reduced incidence of future solar keratoses in patients treated with topical fluorouracil—especially with 5% concentrations.⁶

How to identify solar keratoses.

Typically, the lesion—a flat or slightly elevated brown to red-brown papule—is dry, rough, adherent and sharply defined. Multiple lesions are the rule.

Predictable therapeutic response.

The response to a typical course of Efudex therapy is usually characteristic and predictable. After 3 or 4 days of treatment, erythema begins to appear in the area of keratoses. This is followed by a moderate to intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of this response generally occurs two weeks after the start of therapy and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. Lesions that do not respond should be biopsied.

References: 1. Allen, A. C.: *The Skin, A Clinicopathological Treatise*, ed. 2, New York, Grune & Stratton, 1967, p. 842. 2. Dillaha, C. J.; Jansen, G. T., and Honeycutt, W. M.: "Treatment of Actinic Keratoses with Topical Fluorouracil," in Waisman, M. (ed.): *Pharmaceutical Therapeutics in Dermatology*, Springfield, Ill., Charles C Thomas, 1968, p. 92. 3. Belisario, J. C.: *Cutis*, 6:293, 1970. 4. Sams, W. M.: *Arch. Derm.*, 97:14, 1968. 5. Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey. 6. Williams, A. C., and Klein, E.: *Cancer*, 25:450, 1970.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used, may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

How Supplied: Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)amino-methane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).



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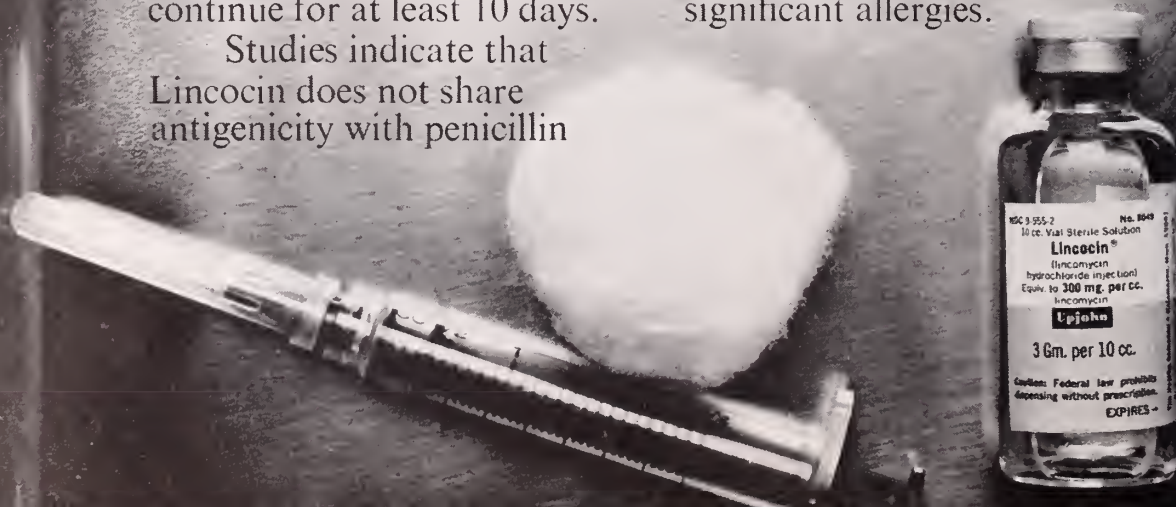
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Lincocin (lincomycin hydrochloride, Upjohn) has produced a high percentage of satisfactory responses in patients with mild, moderate and severe infections due to susceptible streptococci, pneumococci and staphylococci (including many penicillinase-producing strains). With β -hemolytic streptococcal infections, treatment should continue for at least 10 days.

Studies indicate that Lincocin does not share antigenicity with penicillin

compounds. However, hypersensitivity reactions such as angioneurotic edema, serum sickness and anaphylaxis have been reported, some of these in patients known to be sensitive to penicillin. As with any antibiotic, Lincocin (lincomycin hydrochloride, Upjohn) should be used cautiously in patients with histories of asthma or other significant allergies.



So is penicillin-resistant staph.

Lincocin (lincomycin hydrochloride, Upjohn) has been demonstrated to be effective in susceptible penicillinase-producing staphylococcal infections resistant to penicillin (including ampicillin). However, resistant staphylococcal strains have been recovered; resistance appears to occur in a slow stepwise manner. As with

all antibiotics, susceptibility studies should be performed.

Intramuscular and intravenous injections of Lincocin (lincomycin hydrochloride, Upjohn) are generally well tolerated. Instances of hypotension following parenteral administration have been reported, particularly after too rapid intravenous administration.

Sterile Solution (300 mg. per ml.)

Lincocin[®]

(lincomycin hydrochloride,
Upjohn)



Sterile Solution (300 mg. per ml.)

Lincocin[®]

(lincomycin hydrochloride, Upjohn)

for respiratory tract, skin, soft-tissue, and bone infections due to susceptible streptococci, pneumococci, and staphylococci

Each
preparation
contains:

Lincomycin hydro-
chloride monohydrate
equivalent to
lincomycin base

250 mg. Pediatric Capsule 250 mg.
500 mg. Capsule 500 mg.

*Sterile Solution per 1 ml. 300 mg.
Syrup per 5 ml. 250 mg.

*Contains also: Benzyl Alcohol 9 mg.; and,
Water for Injection—q.s.

An antibiotic chemically distinct from others available, indicated in infections due to susceptible strains of staphylococci, pneumococci, and streptococci. *In vitro* susceptibility studies should be performed.

CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. **Local reactions**—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

HOW SUPPLIED: 250 mg. and 500 mg. Capsules—bottles of 24 and 100.

Sterile Solution, 300 mg. per ml.—2 and 10 ml. vials and 2 ml. syringe.

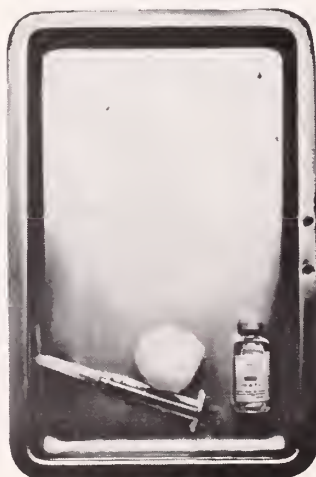
Syrup, 250 mg. per 5 ml.—60 ml. and pint bottles.

For additional product information, consult the package insert or see your Upjohn representative.

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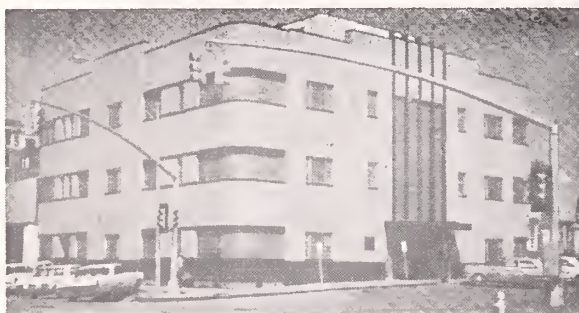
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The JOURNAL

of the Oklahoma State Medical Association

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depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances, syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extropyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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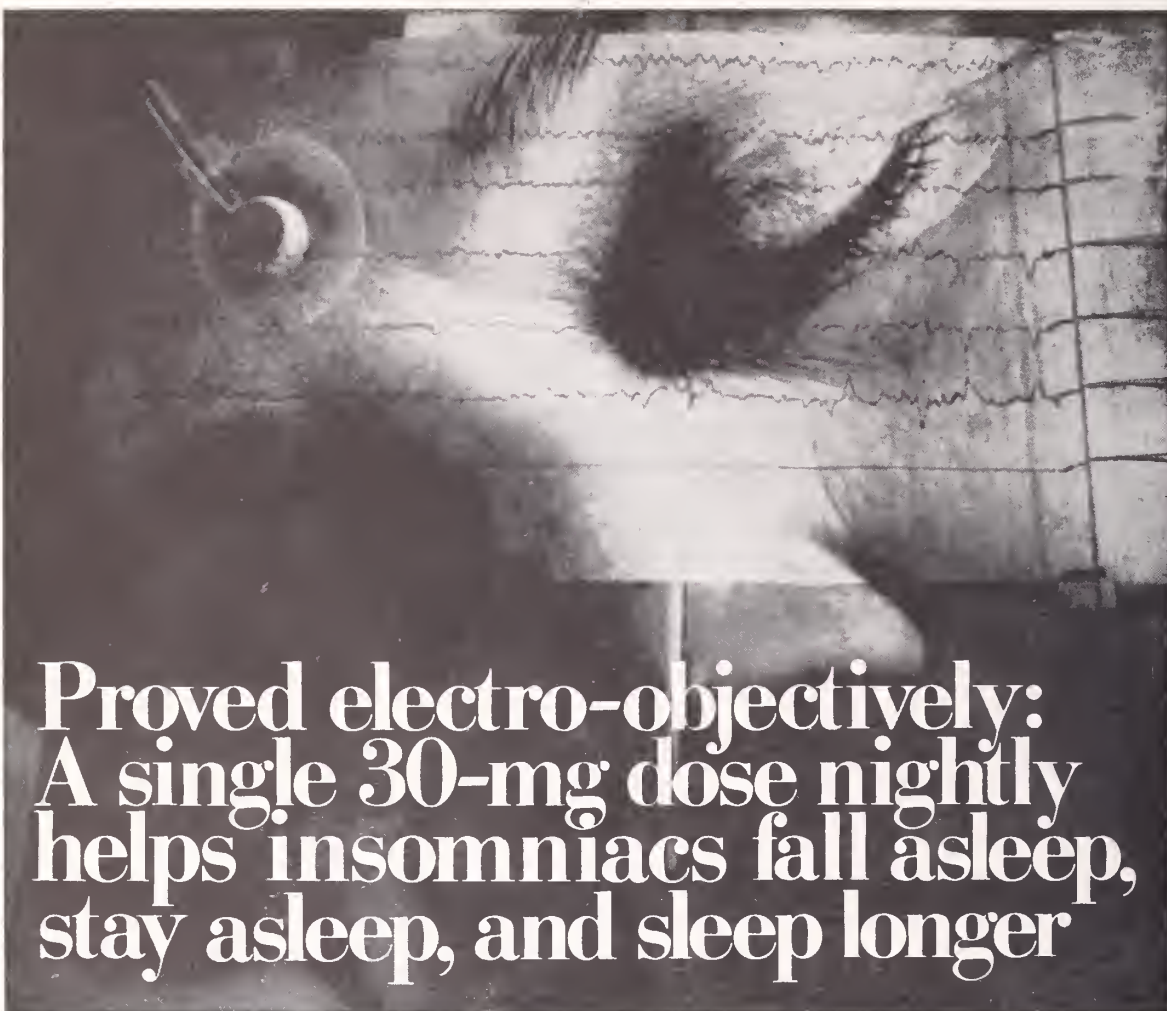
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JOURNAL

Volume 64—Number 8—August 1971

OKLAHOMA STATE MEDICAL ASSOCIATION

AUGUST



Proved electro-objectively: A single 30-mg dose nightly helps insomniacs fall asleep, stay asleep, and sleep longer

Controlled studies of 23 insomniac and 13 normal subjects treated with Dalmane (flurazepam HCl) in five sleep laboratories generated over 4000 hours of electroencephalographic, electro-oculographic and electromyographic tracings. These studies revealed that Dalmane 30 mg nightly usually induces sleep in 22 minutes and provides seven to eight hours of sleep.^{1,2,3}

Moreover, Dalmane 30 mg was found to be useful in all common types of insomnia in which it was studied. Of drugs studied in a sleep laboratory,¹ Dalmane 30 mg was the only one that consistently reduced sleep induction time and maintained sleep nightly for 14 consecutive nights of use.

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Fifty-three controlled studies using a paired-night, double-blind crossover design have evaluated Dalmane clinically. In the majority of these, Dalmane (flurazepam HCl) significantly reduced sleep induction time and increased sleep duration. Dalmane and a placebo were alternated on successive nights in 2010 insomniacs, 1706 of whom were studied for a single night-pair, and the remainder for as many as fifteen paired-nights. A patient preference for Dalmane was apparent in the paired-night studies.

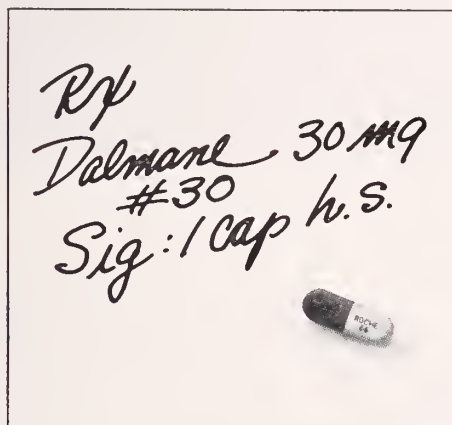
Dalmane was also preferred to certain hypnotics in two separate preference studies. In each of two double-blind studies, Dalmane 30 mg retained effectiveness for the total period of seven consecutive treatment nights, according to subjective/objective evaluations.

In summary, Dalmane is useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. It can be used effectively in patients with recurring insomnia or poor sleeping habits, and in acute or chronic medical situations requiring restful sleep.

Dalmane (flurazepam HCl) is generally well tolerated

In most instances in which adverse effects with Dalmane were reported, they were mild, infrequent and seldom required discontinuation of the drug. Dizziness, drowsiness, lightheadedness and the like were the side effects most frequently noted, particularly in elderly or debilitated patients.³ Instances of hepatic dysfunction, paradoxical reactions (excitement) and hypotension are rare with Dalmane, and morning hang-over is relatively infrequent. In studies to date the effectiveness of Dalmane for recommended periods of use is maintained without need to increase dosage.

References: 1. Kales, A., et al.: "Effectiveness of Sleep Medications: All-Night EEG Studies of Hypnotic Drugs," in Proc. 7th Internat. Cong. Electroencephal. and Clin. Neurophysiol., San Diego, Calif., Sept. 13-19, 1969. 2. Kales, A., et al.: "Psychophysiological and Biochemical Changes Following Use and Withdrawal of Hypnotics," in Kales, A. (ed): *Sleep: Physiology and Pathology*, Phila., Lippincott, 1969, p. 331. 3. Data on file, Medical Department, Hoffmann-La Roche Inc.



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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.



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AUGUST
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Contraindications: Sulfonamide hypersensitivity; infants less than 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis); pregnancy at term and during nursing period.

Warnings: Safe use in pregnancy has not been established, and teratogenicity potential has not been thoroughly investigated. Sulfonamides will not eradicate or prevent sequelae to group A streptococcal infections, *i.e.*, rheumatic fever, glomerulonephritis. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported; early clinical signs such as sore throat, fever, pallor, purpura or jaundice may indicate serious blood disorders. Complete blood counts and urinalysis with careful microscopic examination are recommended frequently during sulfonamide therapy. Clinical data are insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Use with caution in patients with impaired renal or hepatic function, severe allergy, bronchial asthma and in glucose-6-phosphate dehydrogenase-deficient individuals. In the latter, dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *allergic reactions:* erythema multiforme (Stevens-Johnson syndrome), skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *gastro-intestinal reactions:* nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; and *miscellaneous reactions:* drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide and thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

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(sulfamethoxazole)

12 hours of therapy with every dose

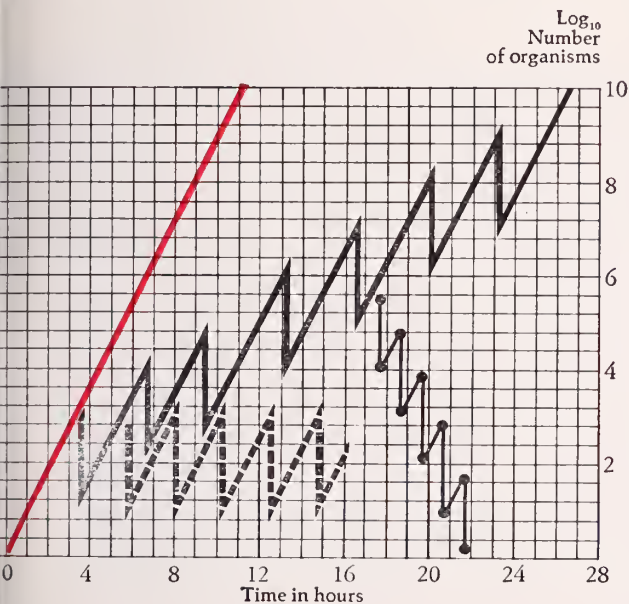


Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

Voiding frequency and bacterial build-up¹

Graph shows the theoretical effect of various voiding frequencies on bacterial proliferation in the urine.

- maximum growth rate during the overnight period
- voiding every 3½ hours
- - - voiding every 2½ hours
- voiding every hour: the "washout" effect



For through-the-night coverage

Force fluids. Frequent micturition. It's hard to fault this regimen for dealing effectively with an acute bladder infection. Another fundamental adjunct to treatment is drug therapy for round-the-clock antibacterial coverage. Coverage that may be especially desirable during the night hours of sleep when urinary retention favors bacterial build-up in the bladder. This is the coverage that Gantanol (sulfamethoxazole) *b.i.d.* can provide.

Controls susceptible gram-negative and gram-positive bacteria

Within 2 to 3 hours of the initial 2-Gm adult dose, effective antibacterial levels in blood and urine begin working to control the most common urinary tract invaders. Subsequent 1-Gm *b.i.d.* doses maintain coverage your patient needs to fight *E. coli* and other susceptible gram-negative and gram-positive pathogens.

Your options: tablets or suspension

Prescribe Gantanol Tablets or the pleasant-tasting Suspension. Either dosage form provides your patient with the all-day, all-night coverage she needs to fight off nonobstructed cystitis.

References: 1. O'Grady, F., and Cattell, W. R.: *Brit. J. Urol.*, 38:156, 1966. 2. Hinman, F., Jr., and Cox, C. E.: *J. Urol.*, 96:491, 1966. 3. Lapides, J., et al.: *J. Urol.*, 100:552, 1968.

Taste!

Dicarbosil®

ANTACID

Your ulcer patients and others will love it. Specify DICARBOSIL 144's—144 tablets in 12 rolls.



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SOUTHWEST REGIONAL POISON CONTROL CENTER

Free toxicological consultation and information on medicinal and commercial products is available by phone when your patients are poisoned. Center is open 24 hours each day, seven days a week, with professionally trained staff present. Call area code 713, SO 5-1420, SO 5-2408 or 765-1011 University of Texas Medical Branch, Galveston, Texas 77550. Supported by PHS-CPF-69-21.

Brief Summary of Prescribing Information—9-9/22/69. For complete information consult Official Package Circular.

Indications: Essential hypertension. Use cautiously in patients with renal insufficiency, particularly if they are digitalized.

Contraindications: Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

Warnings: Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distension, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients. *Use in Pregnancy:* Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss or protoveratrine A may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Stop therapy if protoveratrine A induces digitalis intoxication.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being pre-diabetic should be kept under close observation if treated with this agent.

Adverse Reactions: Hydroflumethiazide: Skin rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation. *Reserpine:* Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares. *Protoveratrine A:* Nausea, vomiting, cardiac arrhythmia, prostration, blurring vision, mental confusion, excessive hypotension and bradycardia. (Treat bradycardia with atropine and hypotension with vasopressors.)

Usual Dose: 1 tablet b.i.d.

Supplied: Bottles of 60, 600, and 1000 scored 50 mg. tablets.

Salutensin®

hydroflumethiazide, 50 mg./reserpine,
0.125 mg. protoveratrine A, 0.2 mg.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

The antihypertensive therapy that is easy to live with.*

When successive blood pressure readings confirm essential hypertension, consider Salutensin for:

Easy-to-live-with control. Gradual reduction of blood pressure leading to decisive, comfortable control is the common clinical response.

*Salutensin is usually well-tolerated (however, serious side effects can occur; see adjacent column for brief summary of prescribing information).

Easy-to-live with dosage. Two tablets a day usually achieves control. One to two tablets a day often maintains control without need for additional antihypertensive agents.

Easy-to-live with cost of therapy. The one to two tablets a day maintenance dose makes Salutensin economical to stay with. Important, because long-term control calls for long-term therapy.

Salutensin[®]
hydroflumethiazide, 50 mg./reserpine,
0.125 mg. protoveratrine A, 0.2 mg.

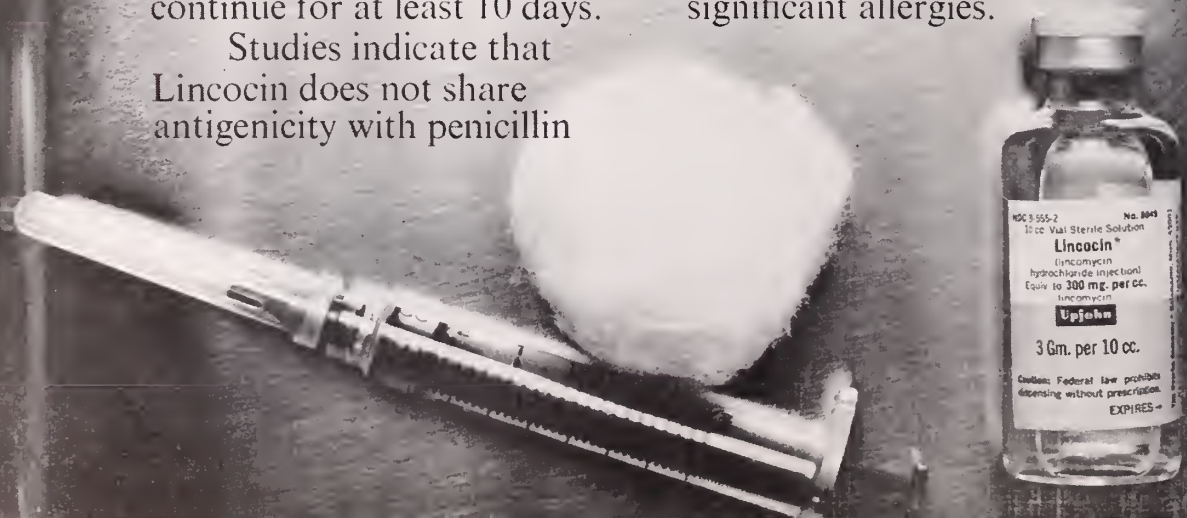


Hypersensitivity to penicillin is a good reason to consider **Lincocin[®]** (lincomycin hydrochloride)

Lincocin (lincomycin hydrochloride, Upjohn) has produced a high percentage of satisfactory responses in patients with mild, moderate and severe infections due to susceptible streptococci, pneumococci and staphylococci (including many penicillinase-producing strains). With β -hemolytic streptococcal infections, treatment should continue for at least 10 days.

Studies indicate that Lincocin does not share antigenicity with penicillin

compounds. However, hypersensitivity reactions such as angioneurotic edema, serum sickness and anaphylaxis have been reported, some of these in patients known to be sensitive to penicillin. As with any antibiotic, Lincocin (lincomycin hydrochloride, Upjohn) should be used cautiously in patients with histories of asthma or other significant allergies.



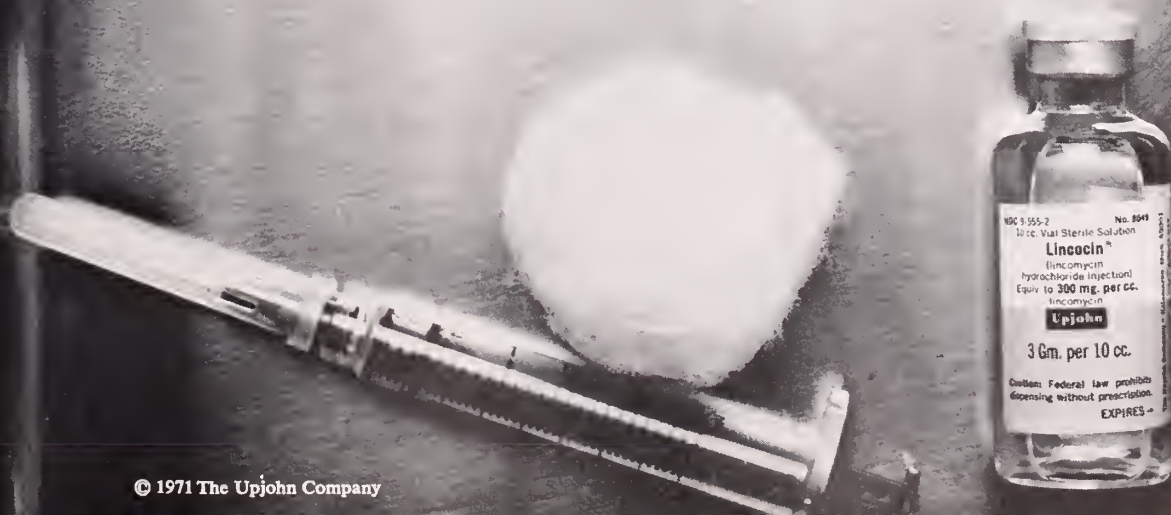
So is penicillin-resistant staph.

Lincocin (lincomycin hydrochloride, Upjohn) has been demonstrated to be effective in susceptible penicillinase-producing staphylococcal infections resistant to penicillin (including ampicillin). However, resistant staphylococcal strains have been recovered; resistance appears to occur in a slow stepwise manner. As with

all antibiotics, susceptibility studies should be performed.

Intramuscular and intravenous injections of Lincocin (lincomycin hydrochloride, Upjohn) are generally well tolerated. Instances of hypotension following parenteral administration have been reported, particularly after too rapid intravenous administration.

Sterile Solution (300 mg. per ml.)
Lincocin[®]
(lincomycin hydrochloride,
Upjohn)



Lincocin[®]

Sterile Solution (300 mg. per ml.)

(lincomycin hydrochloride, Upjohn)

for respiratory tract, skin, soft-tissue, and bone infections due to susceptible streptococci, pneumococci, and staphylococci

Each preparation contains:	Lincomycin hydrochloride monohydrate equivalent to lincomycin base
250 mg. Pediatric Capsule	250 mg.
500 mg. Capsule	500 mg.
*Sterile Solution per 1 ml.	300 mg.
Syrup per 5 ml.	250 mg.
*Contains also: Benzyl Alcohol 9 mg.; and, Water for Injection—q.s.	

An antibiotic chemically distinct from others available, indicated in infections due to susceptible strains of staphylococci, pneumococci, and streptococci. *In vitro* susceptibility studies should be performed.

CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. **Local reactions**—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

HOW SUPPLIED: 250 mg. and 500 mg. Capsules—bottles of 24 and 100.

Sterile Solution, 300 mg. per ml.—2 and 10 ml. vials and 2 ml. syringe.

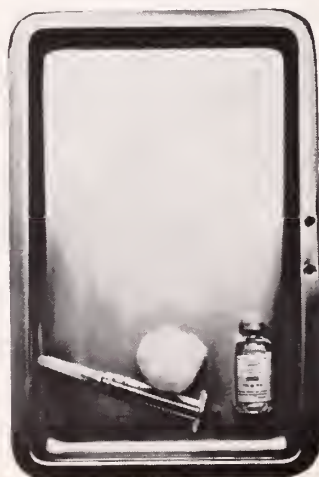
Syrup, 250 mg. per 5 ml.—60 ml. and pint bottles.

For additional product information, consult the package insert or see your Upjohn representative.

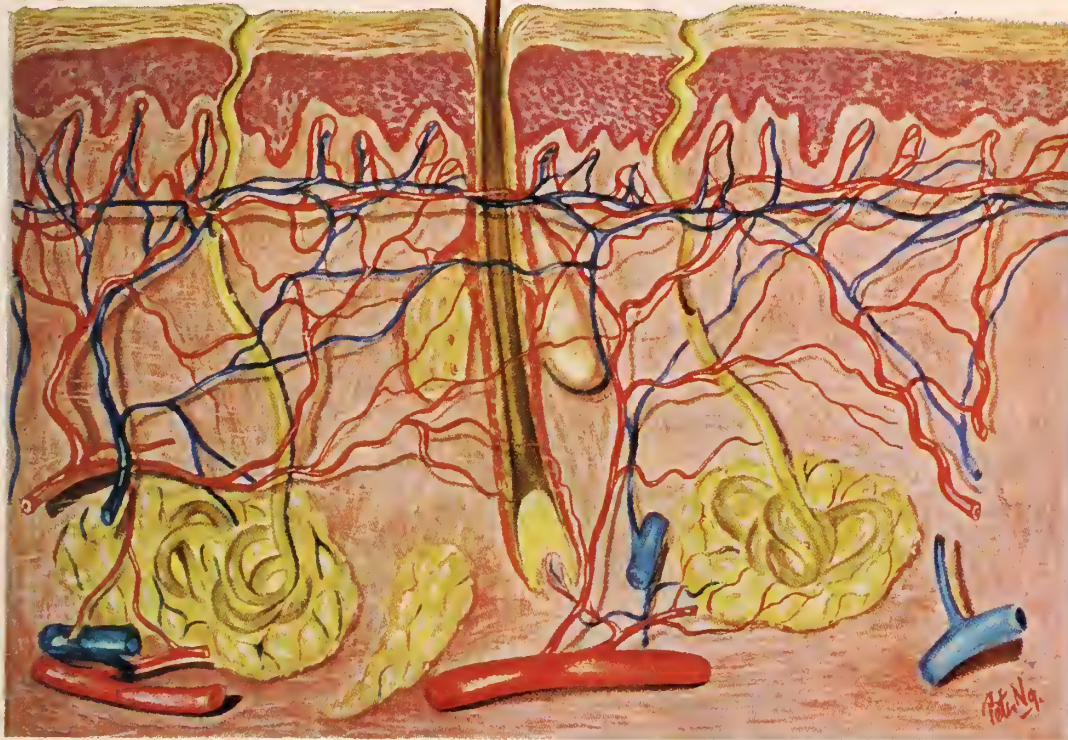
JA71-1203 MED B-5-SR (KZL-6)

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Results on skin are final proof of any topical antibiotic's effectiveness

No in vitro test can duplicate a clinical situation on living skin. 'Neosporin' (polymyxin B — bacitracin — neomycin) Ointment has consistently proven its effectiveness in thousands of cases of bacterial skin infection. The spectra of the three antibiotics overlap in such a way as to provide bactericidal action against most pathogenic bacteria likely to be found topically. Diffusion of the antibiotics from the special petrolatum base is rapid since they are insoluble in the petrolatum, but readily soluble in tissue fluids. The Ointment is bland and nonirritating.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

Complete literature available on request from Professional Services Dept. PML.

'NEOSPORIN'[®]

brand

POLYMYXIN B-BACITRACIN-NEOMYCIN OINTMENT



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.



Lido

gastritis

**when
G-I symptoms
demand
a potent
synthetic
anticholinergic**

**move up to
“the Robinul
response”**

In treating hypersecretion and hypermotility associated with gastritis are you disappointed in the results you've been getting with some of the synthetics?

Then *move up* to a potent anticholinergic—Robinul® Forte (2 mg. glycopyrrolate).

It provides prompt, pronounced, prolonged suppression of gastric hypersecretion, making it a highly effective agent in gastritis and other upper G-I conditions associated with hypersecretion and hypermotility.

Because Robinul Forte exerts a profound antispasmodic action, it is also useful in the treatment of lower G-I disorders, such as functional bowel distress and spastic and irritable colon. If the patient has a “one tract mind” concerning his condition, you can help control the anxiety and tenseness by prescribing Robinul®-PH Forte (2 mg. glycopyrrolate with 16.2 mg. phenobarbital—warning: may be habit forming).

Robinul® 2mg. Forte (glycopyrrolate)

■ **INDICATIONS** Robinul Forte (glycopyrrolate, 2 mg.) and Robinul-PH Forte are double-strength dosage forms of glycopyrrolate. They are primarily indicated for patients who are less responsive to anticholinergic therapy and for control of the more prominent symptomatology associated with acute episodes of gastrointestinal disorders. Emphasis should be on total management, with due consideration of the various therapeutic modalities available, including diet, antacids, anticholinergic agents, sedatives, and attention to emotional problems. Accordingly, glycopyrrolate is recommended in the management of gastrointestinal disorders amenable to anticholinergic therapy, such as: (1) duodenal ulcer, duodenitis, pylorospasm; (2) gastric ulcer, gastritis, esophageal hiatal hernia, hyperchlorhydria, pyrosis, aerophagia, gastroenteritis; (3) esophagitis; (4) cholecystitis, chronic pancreatitis; (5) spastic and irritable colon, ulcerative colitis, functional bowel distress, diverticulitis, acute enteritis, diarrhea; and (6) splenic flexure syndrome, neurogenic gastrointestinal disturbances. When these conditions are associated with psychic overlay, the formulation with phenobarbital may be indicated. ■ **CONTRAINDICATIONS** Glaucoma, urinary bladder neck obstruction, pyloric obstruction, stenosis with significant gastric retention, prostatic hypertrophy, duodenal obstruction, cardiospasm (megaesophagus), and achalasia of the esophagus, and in the case of Robinul-PH Forte (glycopyrrolate with phenobarbital), sensitivity to phenobarbital. ■ **PRECAUTIONS** Administer with caution in the presence of incipient glaucoma. ■ **SIDE EFFECTS** The most frequent side effect noted during clinical trials was dry mouth. Thirty-three (3.3%) of 1,009 patients receiving 1 to 32 mg. of glycopyrrolate a day complained of dry mouth of moderate to severe degree, but only 11 discontinued treatment because of this. Blurred vision, constipation, and urinary hesitancy have been reported infrequently. Other side effects associated with the use of anticholinergic drugs include: tachycardia, palpitation, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, drowsiness, and rash. ■ **DOSAGE** The average and maximum recommended dose of Robinul Forte (glycopyrrolate, 2 mg.) or Robinul-PH Forte is one tablet three times daily (in the morning, early afternoon, and at bedtime). To obtain optimum results, dosage should be adjusted to the individual patient's response. After the more severe symptoms associated with acute conditions have subsided, the dose may be reduced to the minimum required to maintain symptomatic relief. ■ **SUPPLY** Robinul Forte (glycopyrrolate, 2 mg.) is available as scored, compressed pink tablets engraved AHR/2 in bottles of 100 and 500. ■ Robinul-PH Forte (glycopyrrolate, 2 mg., with phenobarbital, 16.2 mg.) is available as scored, compressed blue tablets engraved AHR/2 in bottles of 100 and 500.

A. H. Robins Company, Richmond, Va. **A-H-ROBINS**



The get-up-and-go summer cold and allergy pill.

Novahistine LP can help your patients get out and enjoy themselves in spite of allergic rhinitis, hay fever or summer colds. And even when nasal congestion is caused by repeated allergic episodes, Novahistine LP can usually give prompt and long-lasting relief. These continuous-release tablets contain a vasoconstrictor-antihistamine formulation that goes to work rapidly and lasts for hours. And convenient, twice-a-day dosage lets most patients enjoy relief all day and all night. Use with caution in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

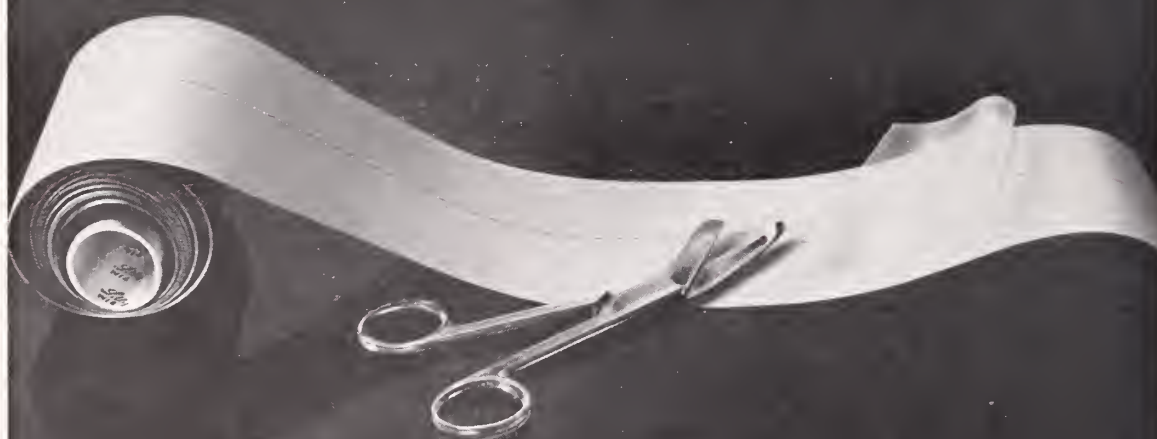
Novahistine[®]
LP decongestant



THE DOW CHEMICAL COMPANY, Rx Pharmaceuticals, Indianapolis

(Each tablet contains 25 mg. of phenylephrine hydrochloride and 4 mg. of chlorpheniramine maleate.)

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Cordran[®] Tape
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000121

Lilly

Get Some Rest, Doctor

"COME IN, Mrs. Brown. I'm sorry you had to wait so long but I've had trouble . . ."

"Oh that's alright, doctor. I'm sorry I had to barge in without an appointment but you know you told me to come in every month to have my blood pressure checked and Bobby has to have this paper signed by you before he goes to camp and . . . Bobby! Now where is he? He has a breaking out around his mouth that looks infected and I wanted you to look at it before he gets away.

"Bobby! Quit playing with the drinking fountain and come in here so the doctor can look at your infantigo!"

"Mrs. Brown this is an examination form that will take some time to complete and I haven't seen Bobby in over four years. Also, this side has to be filled out by you and he will have to have some immunization boosters and with that rash I'm not sure . . ."

"Oh, you can just have your nurse fill out all that information from your records here. Is that infantigo on his lips there? It started out as a little pimple about three weeks ago and I got this at the drug store . . . Here's the tube but I can't make out all that fine printing on the label . . . Is it alright to put it on?"

"The label is so blurred I can't make out the ingredients even using the magnifying glass. When did you get this ointment, Mrs. Brown?"

"Oh I got it . . . let's see . . . a year ago Christmas, when mother was visiting us. She had burned herself on the oven and it cleared her up real fast. That reminds me; I got a letter from her . . . I brought it with me . . . it's right here in my purse . . . I know I put it here just before I left the house. Here it . . . Oh no, that's the insurance form you need to sign. I'd almost forgotten that and John told me to be sure and have you fill it out and sign it so he can . . . Here it is! Mother took daddy to Doctor Smith in Big City and he said that daddy has . . . What's that disease there?"

"I'm not too sure I can read your mother's writing but it looks like diabetes mellitus. That's sugar diabetes, Mrs. Brown. You know, too much sugar in the blood and . . ."

"Well, mother said to ask you if it was

catching or hereditary or anything and how long would it take to cure it and if he would ever have to take shots for it?

"Your blood pressure is a bit higher than it was the last time I checked it three months ago, Mrs. Brown. Have you been taking your medication according to instructions?"

"Well, no; I ran out of both those medicines last week and just haven't gotten around to having those prescriptions refilled. Do I have to keep on taking both those medicines the rest of my life? They're so expensive. John said if we didn't have so many doctor bills to pay we could afford to get a new boat and motor. You know, we go to the lake almost every weekend during nice weather and we've about worn out that old rig we have. You ever get to the lake, doctor?"

"I keep planning to get away but . . ."

"If you want me to keep on taking that medicine would you write me some new prescriptions? I lost my old ones that you said I could have refilled but the pharmacy I've been using is just too high and I want to start trading at that discount place. I guess I'll need to get new prescriptions for that tranquilizer you give John, too. And for whatever you're going to prescribe for Bobby's infantigo."

"Mrs. Brown, impetigo is somewhat contagious and Bobby will have to wait . . ."

"If you've got other patients to see, Bobby can just wait in the waiting room until you've seen all of them and he can be last. If you'll have your girl call us when he's through, we'll pick him up. And if you can sign those insurance forms in your free time . . ."

"I sure hope you can get away for a little rest, doctor. You look tired. Why don't you just tell everybody that you've gone fishin' and take off? I don't know what we'd do if anything happened to you . . ."

"What should I tell mother about daddy? Would you mind if I brought them in sometime . . .?" MRJ □



The month of June produced the first crisis of my short administration. This resulted when the Blue Cross Board of Trustees upset the traditional ratio of an equal number of physicians to laymen on that Board.

This in turn brought about the resignation of a Blue Shield Trustee, Doctor Scott Hendren, a most respected and knowledgeable member of our medical society. The change in the Blue Shield bylaws established a ratio of 4/7 lay members to 3/7 physician members. This was accomplished during the absence of several of the physician members at the Blue Shield Board meeting on June 13th. These physicians had not been apprised of the agenda, which was to include a resolution changing the bylaws. It was the feeling of the medical members of the Blue Shield Board that this was so pre-arranged.

Of course, this greatly upset the medical members of the Blue Shield Board, to put it mildly. As a consequence, Doctor Riley Strong, Chairman of our Board of Trustees, called a meeting on July 18th to discuss the situation.

Why should the physicians be so strongly concerned? Some reasons are noted as follows:

1. The Blue Shield Plan was set up by doctors in the 1940's with their funds.

2. The Blue Shield Plan has become a strong non-profit insurance organization with the leverage supplied by doctors over the years.

3. The voting strength of the physician members of the Blue Shield Board has been diminished, giving more power and control to the lay portion of the Board. It would become increasingly difficult for the physicians to protect their own interest and that of their patients, since we now have a consumer's plan rather than the doctor's plan.

In the past, the relationship of the medical profession and the Blues has been mutually satisfactory. There have occasionally been some differences in thinking, but, these were resolved without difficulty. This most recent action by the Blue Shield Board, however, will certainly lead to a confrontation between the Blue Shield Board and a committee representing the Oklahoma State Medical Association. It is possible that this meeting will already have taken place before this communication is printed in the OSMA Journal. □

Sincerely,

Lucien G. Pascuri

Splenic Arteriography

DAN T. SULLIVAN, M.D.
DAN MITCHELL, JR., M.D.
ROBERT CARLIN, M.D.

Splenic arteriography is a safe and accurate method to detect occult traumatic splenic rupture.

DURING THE past twelve months we have had the opportunity to diagnose, angiographically, splenic injury in a limited number of cases. Selective celiac or splenic arteriography has proved to be of value in the management of these particular cases of blunt thoraco-abdominal trauma.

The most frequently injured organ in cases of blunt abdominal trauma is the spleen.¹³ In many cases, particularly when the spleen is severely lacerated, the diagnosis can be strongly suspected on the basis of physical findings and four quadrant abdominal tap. Frequently, plain film findings will be of value in arriving at an accurate diagnosis.^{2, 11, 14, 15} Occasionally these findings are insufficient for adequate evaluation, and patients may be subjected to un-

necessary exploratory laparotomy. Other patients with only slight splenic injury, and inconclusive findings of splenic rupture may be observed until delayed rupture occurs requiring emergency life saving procedures. In fifteen to twenty percent of the cases, the symptoms resulting from these injuries may not be manifest until 48 to 72 hours after the initial trauma.¹³ This is usually due to a slowly progressive subcapsular hematoma, or to renewed hemorrhage from subsequent clot retraction after initial tamponade by the surrounding structures. A safe and accurate procedure for diagnosis of splenic injury is selective splenic arteriography.

The use of angiography in the study of trauma is a relatively recent development and its full potential has yet to be realized by clinicians. Initially an aortogram may be the procedure of choice to evaluate the abdominal viscera. This can be followed by selective splenic, hepatic or renal arteriograms as indicated. This direct technique can be applied with minimal risk, and permits accurate assessment of trauma to the abdominal solid organs.⁴ Four years of angiographic experience in trauma cases at Cook County and Northwestern University Hospitals has demonstrated that arteri-

ography provides extremely valuable information, is relatively free of major complications and virtually eliminates the problem of delayed rupture of the spleen.³ Recent reports in the literature indicate a high degree of diagnostic accuracy with virtually no complications. Freeark³ reported 27 cases of which 24 ruptured spleens were correctly identified by angiography. There were two false negative angiograms. Stein¹² reported three cases of ruptured spleen diagnosed by arteriography after negative four quadrant abdominal taps. Love⁵ reported three patients who presented with renal contusion with secondary gross hematuria and were found to have unsuspected splenic rupture. The first case of rupture of the spleen⁶ diagnosed by angiography was reported in 1957, and relatively few cases have been reported since that time.

Three basic types of splenic rupture occur:

1. Laceration through the capsule and parenchyma.
 - a. Extensive laceration with immediate hemorrhage. (Clinical findings are usually diagnostic.)
 - b. Less extensive laceration with tamponade confining the hemorrhage. (This condition may be clinically evident or plain film findings may be diagnostic.)
2. Small capsular tear with oozing of blood. (Clinical findings and plain film findings may be delayed, but condition is angiographically evident early.)
3. Intracapsular injury with subcapsular or intra-parenchymal hematoma formation. (It may not be suspected clinically for several days or longer, but it is easily diagnosed by arteriography.)

The most reliable angiographic signs of splenic injury in our experience are:

1. Stretching of the splenic vessels due to hematoma.
2. Extravasation of contrast material within the spleen.
3. Distortion of the normal splenogram.
4. Premature visualization of the splenic vein due to abnormal arteriovenous

communication within the spleen.

5. Mottled opacification persisting beyond the venous phase.
6. Area of poor opacification in the capillary phase representing avascular splenic pulp or hematoma.

Less helpful signs include displacement of adjacent structures, splenic enlargement, and the distance between the spleen and diaphragm.

Selective arteriography by the percutaneous femoral approach can be performed quickly and efficiently on the conscious or unconscious patient. We have studied six patients by this method during the past year. Aortography and selective celiac or splenic arteriograms were done depending upon the individual case. The histories and findings of the six cases are briefly summarized below. The second of the two "negative" cases is not included.

CASE 1

A 20-year-old female was admitted to the hospital five days after an automobile accident. She had pain in the left upper abdomen, as well as pleuritic pain on the left. A chest x-ray was negative for pleural effusion and rib fractures. Clinically, splenic rupture was not strongly suspected but

Dan T. Sullivan, M.D., was graduated from the University of Oklahoma School of Medicine in 1962. He is presently a resident in radiology at Baptist Memorial Hospital in Oklahoma City.

Since his graduation from the University of Oklahoma School of Medicine, Dan Mitchell, Jr., M.D., has been certified by the American Board of Radiology. He is a member of the American College of Radiology, the Radiological Society of North America and the Society of Nuclear Medicine.

Robert A. Carlin, M.D., received his medical degree from the University of Maryland School of Medicine in 1957. Certified by the American Board of Radiology, Doctor Carlin holds memberships in the Radiological Society of North America and the American College of Radiology.



Figure 1 (Case 1). Early arterial phase of normal celiac arteriogram.

could not be excluded. A selective celiac arteriogram revealed no evidence of splenic injury. The patient had an uneventful course and was discharged. Figures 1 and 2 demonstrate the normal celiac arteriographic findings in the early arterial and venous phases.

CASE 2

A 16-year-old male was referred from another hospital for management of chest



Figure 2 (Case 1). Venous phase of normal splenic arteriogram with good opacification of the splenic vein.



Figure 3 (Case 2). Arterial phase two seconds after injection. Note extravasation of contrast material within the spleen.

injury sustained two weeks previously. There were multiple rib fractures on the left and a left pleural effusion. Clinically, splenic rupture was not suspected, although plain film findings at the hospital of origin were suspicious for ruptured spleen. The selective splenic arteriogram demonstrated multiple bleeding sites within the splenic parenchyma. This corresponds to Type I B injury previously described. Figures 3 and 4 demonstrate the arteriographic findings.

CASE 3

A 17-year-old male was admitted following blunt trauma to the abdomen and chest sustained in an automobile accident. Fractures of several left ribs and a hemothorax were present. Clinically, splenic rupture was suspected. Selective splenic arteriogram demonstrated a diffuse mottled appearance in the upper pole and distortion of the lateral margin of the upper pole indicating a cortical laceration. This coincides with Type II splenic trauma. Fig-



Figure 4 (Case 2). Capillary phase which demonstrates a laceration of the capsule and parenchyma.

Figure 5 demonstrates the arteriographic finding.

CASE 4

A 19-year-old male was admitted with a history of blunt abdominal and chest trauma as a result of an automobile accident. There were no rib fractures, but small bilateral pneumothoraces were present. Clinically, splenic rupture was suspected although a four quadrant abdominal tap was negative. The following day, because of persistent abdominal pain, a selective arteriogram and aortogram were performed. The selective splenic arteriogram demonstrated cortical laceration in the upper pole, considerable intra-splenic bleeding and A V shunting through the traumatized spleen. This corresponds to a Type II splenic injury. Figure 6 demonstrates the arteriographic finding.

CASE 5

A 31-year-old female was admitted with a five-month history of episodes of nausea



Figure 5 (Case 3). Arterial phase. Diffuse mottling in upper pole and stretching of upper splenic artery branches in upper pole.



Figure 6 (Case 4). Arterial phase. Laceration of upper pole with generalized intrasplenic bleeding.



Figure 7 (Case 5). Arterial phase. Subcapsular hematoma. Splenic enlargement with displacement and stretching of splenic vessels due to hematoma.

and vomiting, severe epigastric pain and a 23 pound weight loss. There was a history of abdominal trauma and stomach surgery during childhood. The upper GI examination demonstrated a large retrogastric mass. Celiac arteriogram also demonstrated a splenic subcapsular hematoma. At surgery, a large pancreatic cyst was removed from the tail of the pancreas. The spleen was also removed and demonstrated a post traumatic splenic cyst. This corresponds with Type III splenic injury, and the findings are demonstrated in Figure 7.

CONCLUSION

Of the six cases studied angiographically, the four cases of splenic injury were con-

firmed by surgery. Clinical followup on the cases of negative angiographic findings confirmed absence of splenic injury.

Three additional cases have been studied since the completion of this paper. One of these proved to be a false positive diagnosis of subcapsular hematoma based upon the separation of the spleen from the diaphragm and lateral abdominal wall.

Angiography has proved to be a valuable tool in evaluation of blunt chest and abdominal trauma. Several large hospitals throughout the country now employ this modality to evaluate certain trauma patients. We have found it to be useful and recommend it be employed in hospitals that have the necessary equipment. □

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New Aspects of Hepatitis

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The recent discovery of the relationship of hepatitis-associated antigen to acute hepatitis and to chronic liver disease has fostered new concepts of the pathogenesis, epidemiology and management of these conditions.

THE DISCOVERY of the relationship between Hepatitis-Associated Antigen (HAA) and viral hepatitis is one of the most significant advances in hepatology during this century. The finding that HAA represents the virus of serum hepatitis has considerably modified prior concepts of hepatitis.¹ This presentation will summarize current concepts of HAA emphasizing new aspects of viral hepatitis and chronic liver disease.

HEPATITIS ASSOCIATED ANTIGEN

In the early 1960's B. S. Blumberg, M.D., and associates were investigating genetic determinants by study of lipoprotein antigens in human blood. They detected in the sera of patients with hemophilia and in others who had received large numbers of transfusions, precipitating antibodies

against serum proteins in the transfused blood. Since one rare antigen happened to be found initially in the serum of an Australian aborigine it was designated Australia antigen (Au[1]). The notations Au[1] and SH antigen (for serum hepatitis) were used interchangeably until the term HAA became more generally accepted.

HAA was found in two to five percent of "normal" subjects in the tropics and in up to 20 percent of the population in areas endemic for hepatitis but was extremely rare among normal subjects in the United States. The antigen was noted with high frequency in patients with leukemia and thalassemia who had received multiple blood transfusions, in patients with uremia and lepromatous leprosy presumably because of an abnormal immune response and in institutionalized patients with Down's syndrome (Mongolism). These patients with Down's syndrome were found to have chronic anicteric hepatitis. Outpatients with Down's syndrome or those hospitalized in small institutions where sanitation problems were better controlled, however, did not have HAA or chronic hepatitis. When acquisition and disappearance of the antigen was observed in relation to the clinical manifestations of hepatitis, it became apparent that HAA represented the infectious agent of hepatitis.² By 1969 HAA was related to several variants of chronic liver disease as well.³

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Under the electron microscope, HAA particles isolated from serum appear rather homogeneous with diameters of about 200 Angstroms and lengths up to 2,300 Angstroms. Rare particles seem to have a central core. Some investigators consider the particles with core material to represent complete virus or infectious virion, but neither DNA nor RNA have as yet been positively identified. Observations on the physical and chemical stability of HAA are consistent with the known characteristics of the infectious agent of hepatitis.⁴

HAA has been detected in the serum of several sub-human primates including some inoculated with components of human blood containing HAA, but a suitable non-immune animal model has not been found. Transmission of hepatitis in man results from transfusion of blood or purified plasma protein containing HAA and second passages have been documented.⁵ Administration of plasma containing detectable HAA even when diluted 10^4 produced clinical hepatitis with or without detectable HAA or no clinical illness with or without detectable HAA. HAA has not yet, however, been readily propagated in tissue culture. Therefore the evidence that HAA is the specific infectious agent of hepatitis although compelling is still indirect. The information to date suggests that HAA is chiefly the protein coat of a small virus but precise classification of the virus has not been accomplished. Furthermore, development of an effective vaccine against serum hepatitis although forthcoming is not yet feasible.*

Ouchterlony immunodiffusion, adapted to demonstrate HAA initially, is still frequently used because of its simplicity, but it is relatively insensitive and takes one to three days for completion. Counterelectrophoresis in gel is more rapid, requiring only several hours, and its sensitivity is tenfold that of immunodiffusion. Complement fixation is as rapid as counterelectrophoresis but is even more sensitive, can be automated and has the advantage of detecting antigen-antibody complexes by measurement of anti-complementary activity. Hemagglutination

or radioimmunoassay techniques are especially sensitive for the determination of anti-HAA but radioimmunoassay is too complicated for routine use. A fluorescent antibody technique detecting HAA in the nuclei of liver cells of patients with hepatitis has recently been described.

In the United States, HAA has been found in 0.1 percent of healthy individuals and in 0.2 percent of hospitalized patients without liver disease. The antigen has been rarely detected in the sera of patients with alcoholic fatty liver, hepatitis or cirrhosis, drug-induced jaundice or infectious mononucleosis.

VIRAL HEPATITIS

In general, infectious hepatitis (IH) refers to short incubation, MS-1 strain, HAA-negative or virus A hepatitis while serum hepatitis (SH) refers to long incubation, MS-2 strain, HAA-positive or virus B hepatitis. The MS designation refers to patient M at Willowbrook State School for mentally retarded children in New York from whose serum the MS-1 and MS-2 viruses were derived during separate episodes of hepatitis. Current terminology for the two types of viral hepatitis is inadequate because the incubation period of each virus depends upon the dose of virus, the mode of introduction and the host response; both viruses can be transmitted parenterally or orally; and the HAA virus cannot always be detected during HAA-induced hepatitis. Thus,

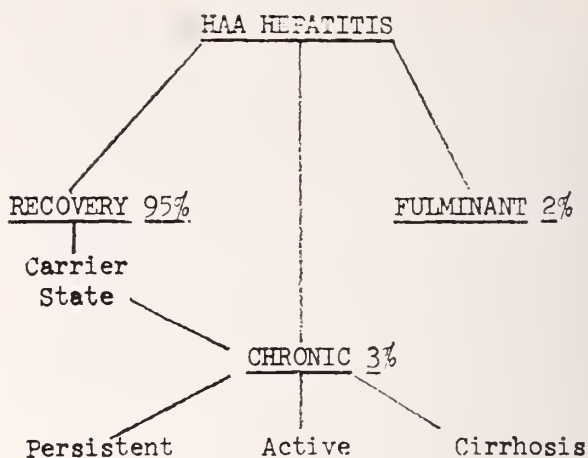
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*Since submission of this manuscript Krugman and co-workers (J.A.M.A. 214:41, 1971) have reported the prevention of MS-2 viral hepatitis in four subjects by immunization with two inoculations of inactivated diluted MS-2 serum.

designations based on the duration of incubation periods which are difficult to determine clinically and which may overlap are misleading; the term, serum hepatitis, implying only one method of transmission is a misnomer; and inability to detect HAA does not exclude the diagnosis of HAA hepatitis. Precise terminology will be possible only when each virus or evidence of its presence can be specifically and reliably identified. Perhaps in the meantime the terms MS-1 and MS-2, because the relevant data regarding these have been derived from carefully controlled experiments, or the non-committal designations virus A and virus B are the most appropriate. Homologous immunity almost always follows infection with each virus, especially virus A, but cross immunity between the two types does not occur. The recurrence rate in viral hepatitis is about five percent; second episodes of documented HAA hepatitis have been described.

Despite documented contact spread of HAA hepatitis, HAA has not been found in stool from patients who had HAA in their serum. Transmission by urine, nasopharyngeal or other secretions has not been excluded. Infection of an infant with HAA more likely occurs by the oral route shortly after birth rather than by transplacental transmission. Mosquitoes or other hematophagous insects are potential but not proven vectors in areas endemic for hepatitis since a minute quantity of blood (0.005 ml.) is sufficient for transmission. Epidemics of hepatitis have almost always been reported to be HAA-negative and are usually due to contaminated food or water and poor sanitation in closed communities. However, if such point-source epidemics were caused by HAA, the dose of virus would be less than that after blood transfusions and HAA might not be detected. MS-1 is more infectious orally than MS-2 by this route.

HAA-negative hepatitis usually occurs among children or young adults and rarely occurs over the age of 30 while HAA hepatitis occurs at any age. HAA has been detected in about 65 percent of patients thought to have hepatitis transmitted by blood transfusions or contaminated needles.



Sequelae of acute HAA hepatitis. Transitions within this spectrum of disease may occur. The precise potential for transmission of HAA from asymptomatic carrier or patients with chronic liver disease has not yet been established.

Frequent and early testing with the more sensitive techniques might increase this incidence although the antigen has usually been in high titer when present. Also, MS-1 hepatitis transmitted by blood accounts for some HAA negative cases spread hematogenously. Prospective evaluations have yielded frequencies of HAA as high as 95 percent when documented HAA hepatitis is transmitted parenterally. HAA is probably the major cause of sporadic hepatitis among urban adults.⁶ HAA has been positive in about 55 percent of adults with sporadic hepatitis reflecting unidentified parenteral exposure to HAA, fecal-oral transmission of HAA and a high level of immunity to MS-1 virus. Most HAA hepatitis in teenagers and young adults is related to drug abuse and about half of the hepatitis in drug addicts is HAA positive, transmission occurring by shared needles or intimate contact.

In acute hepatitis, HAA determined by complement fixation appears in the serum about four weeks before the onset of jaundice. The less sensitive immunodiffusion technique detects HAA about two weeks later than the complement fixation technique, at about the same time that elevation of serum transaminase occurs but still before the appearance of jaundice. In most instances of acute hepatitis, HAA persists for a few days to three weeks from the onset of symptoms and disappears well before symptoms subside or biochemical abnormali-

ties return to normal. Anticomplementary activity is the ability of the serum alone, without addition of antigen or antibody, to inactivate or fix complement and is thought to reflect antigen-antibody complexes. Anticomplementary activity is present early in the course of hepatitis, disappears when HAA becomes excessive and reappears as the antigen-antibody ratio decreases. The roles of antigen (HAA), antibody (anti-HAA) and antigen-antibody complexes in the pathogenesis of hepatitis have not yet been delineated. The multisystemic manifestations and ultimate outcome of this disease may relate, as in serum sickness, to the balance between antigen and antibody in the host.

The incubation period of MS-1 is two to six weeks while that of MS-2 is six weeks to six months although there is overlap. The incubation period of MS-2 infection following oral transmission is longer than after parenteral inoculation, while that of MS-1 is essentially the same following oral or parenteral exposure. Recipients of a low dose of virus tend to have a mild illness after a long incubation period and may retain the antigen indefinitely. In natural disease the precise time of infection is frequently unknown so that estimation of the incubation period is inaccurate. The onset of MS-1 is usually acute while that of MS-2 is usually insidious, but clinical distinction on this basis is difficult. The rise in serum transaminase is more gradual and prolonged with MS-2 than with MS-1 hepatitis where the elevation peaks sharply and is more transient. In MS-1 hepatitis, serum immunoglobulin M and thymol turbidity are more often abnormal than in MS-2 hepatitis. The mortality rate of MS-1 is less than 0.1 percent while that of MS-2 which more often progresses to chronic liver disease is from one to ten percent.

Gamma globulin is effective in preventing or modifying MS-1 hepatitis but is not of value in the prevention of MS-2 hepatitis. Gamma globulin should be administered to household or intimate contacts of patients with MS-1 or HAA-negative hepatitis but not to patients exposed to MS-2 or HAA-positive hepatitis. The recommended dosage is 0.5 ml. for persons less than 50 pounds,

one ml. if 50 to 100 pounds and two ml. if over 100 pounds, and should be administered as soon as possible, within five weeks of exposure. U. S. Public Health Service guidelines suggest doubling this dosage for institutional contacts or for extended (three to six or more months) travel or residence in endemic areas where administration may be repeated at four to six month intervals. Reactions to gamma globulin are rare and the significance of antibody production against exogenous gamma globulin is not clarified. These same principles for gamma globulin administration apply to high risk situations and individuals including postmenopausal women, debilitated or aged patients, hospital needle accidents, renal dialysis or exchange transfusion teams or drug abuse hepatitis. Emphasis should always be placed on sound hygienic practices to prevent fecal-oral or hematogenous spread of both types of hepatitis.

Although the routine administration of gamma globulin is not of value in preventing post-transfusion hepatitis,⁷ other measures are rewarding. For example, the incidence of post-transfusion hepatitis can be decreased about 25 percent by screening blood donors for HAA, and application of the more sensitive tests might increase this percentage. Some evidence suggests that the cases that can be prevented by current screening techniques for HAA are those that would have been the most severe. Since carriers of hepatitis virus frequently have increased immunoglobulin values, although this abnormality is nonspecific, measurement of serum immunoglobulin is also useful for screening blood donors. Blood from commercial donors is at least ten times more hazardous for the transmission of hepatitis than blood from private volunteer donors so that procurement of blood from the latter should be urged. Finally, the numbers of units of blood administered should be limited to only those that are essential and single unit transfusions should be avoided.

Hospitalization is rarely necessary in the management of patients with acute viral hepatitis but is indicated for the very ill patient unable to eat with lethargy, nausea or vomiting. Regardless of the type of hepatitis, isolation procedures should include

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needle precautions and protection against fecal-oral transmission until about three weeks after the onset of jaundice. Enforced bed rest is not beneficial and controlled studies have shown that physical activity does not have an adverse effect on the course of acute hepatitis in young men.⁸ The value of bed rest very early in the course of hepatitis—for example when HAA first becomes positive—has not been assessed. Activity may be increased as tolerated in relation to fatigue and most patients can return to work within three to four weeks after the disappearance of jaundice even when minor abnormalities of serum bilirubin, transaminase or BSP retention persist. Parenteral glucose may be needed until the subsidence of anorexia permits ingestion of a normal nutritious diet. Protein restriction is indicated only with encephalopathy, fat restriction only if fat is precluded by nausea and sodium restriction only with fluid retention. Evidence is lacking to support the use of corticosteroids in acute hepatitis.

HAA IN CHRONIC LIVER DISEASE

A specific infectious agent may result in a spectrum of diseases depending upon the genetic makeup of the host it infects. In different persons with HAA in their blood, varied diseases may become manifest including acute hepatitis, chronic persistent hepatitis, the several types of chronic active hepatitis, primary biliary cirrhosis, or post-hepatitic cirrhosis as well as an asymptomatic carrier state. HAA when present is generally transient in acute hepatitis and persistent in chronic hepatitis. Persistence of HAA has been suggested to reflect an autosomal recessive trait of the host. HAA found in the sera of patients having hepatoma within some but not other population groups further emphasizes the role of genetically determined host factors in influencing the manifestations of disease. The presence of HAA in chronic liver disease suggests that persistence of the infecting agent is an important etiologic factor but does not exclude an altered immunological response to infection.

Acute hepatitis is a self limited disease in 95 percent of patients; one to two percent develop fulminant hepatitis with a usually fatal outcome and three to four percent progress to chronic liver disease (Figure). An adult with acute HAA hepatitis has about a five percent chance of becoming a carrier of HAA, whereas the risk in children is higher. In one study, 18 percent of asymptomatic institutionalized adults and 35 percent of institutionalized children who had a positive test for HAA after inoculation with the MS-2 agent retained the serum antigen for one or more years. Persistence of the antigen in the serum of a patient for more than one or two months should raise the suspicion of the development of chronic hepatitis. Ordinarily when HAA is detected in a patient four months after the onset of acute hepatitis, it remains indefinitely. However, disappearance of the antigen has been described in patients with chronic anicteric hepatitis in Down's syndrome and in patients with chronic active liver disease.

Asymptomatic subjects who have hepatitis-associated antigenemia have been found to have histologic evidence of chronic liver disease even without a history of antecedent hepatitis and with normal liver function tests. The actual proportion of patients with hepatitis-associated antigenemia having abnormal liver histology is now known. About 25 percent of potential donors identified as HAA carriers had elevated transaminase; about half of these had persistent hepatitis and the rest had chronic active hepatitis or cirrhosis on liver biopsy. Although persistence of the antigen may occur after all degrees of severity of hepatitis, evidence suggests that this occurs more frequently after a lower dose and mild or subclinical hepatitis than after a large inoculum of infectious virus and overt clinical disease.

Chronic active liver disease is a persistent or fluctuant progressive disease for which complete and permanent remission has not been described.⁹ The etiology is usually uncertain, but HAA determined by the relatively insensitive immunodiffusion technique is present in 10 to 25 percent of patients. Most patients die within three years and 95 percent are dead within ten years. Activity of the disease is reflected by eleva-

tions of serum transaminase and gamma globulin, by hepatocellular piecemeal necrosis on the liver biopsy and sometimes by florid clinical manifestations. More than half of patients having chronic active hepatitis develop cirrhosis, variceal bleeding, fluid retention or encephalopathy. The LE clot test is positive in about one-third, smooth muscle antibody in two-thirds and antimitochondrial antibody in about one-fifth of patients. The presence or absence of HAA in the serum does not correlate with the severity or course of chronic active liver disease. Controlled prospective study has recently proven that the treatment of choice for chronic active liver disease is Prednisone 20 mg./day, although a combination of Prednisone 10 mg. and Azathioprine 50 mg./day may be of equal value with potentially less adverse effects of long-term treatment.¹⁰

It is important to distinguish chronic active hepatitis from chronic persistent hepatitis. Up to 50 percent of patients with chronic persistent hepatitis have HAA. Chronic persistent hepatitis manifests a benign course without clinical or biochemical progression of liver disease, is not influenced by corticosteroids and does not lead to cirrhosis.¹¹ Because an increased serum transaminase or BSP retention may be the only laboratory abnormalities in chronic persistent hepatitis this condition has also been termed benign transaminitis. Although these patients have been followed an average of six years and even up to 20 years and generally are leading active lives, the ultimate prognosis for complete recovery in all cases is uncertain because transition to chronic active hepatitis may rarely occur. The LE clot test, smooth muscle antibody, and antimitochondrial antibody are negative in chronic persistent hepatitis. The serum transaminase is higher in patients with chronic active hepatitis after the first year of illness, at which time differentiation is further aided by normal gamma globulin and immunoglobulins in chronic persistent hepatitis. The major differentiating feature on liver biopsy is the severe piecemeal necrosis seen in patients with chronic active hepatitis and absent in chronic persistent hepatitis. The liver biopsy in persistent hep-

atitis may show mild focal areas of hepatocellular necrosis, slight portal or parenchymal round cell inflammatory infiltrate and minimal or absent fibrosis with preservation of the lobular architecture.

Lupoid or autoimmune hepatitis describes chronic active hepatitis in patients having a positive LE clot test or other immunological abnormalities. Clinical, biochemical and histological features do not distinguish a specific disease associated with a positive LE clot test which therefore should be regarded as a non-specific response to liver injury. HAA has also been found in chronic hepatitis patients with a positive LE clot test.

Subacute hepatic necrosis (SHN) is differentiated from slowly resolving classic hepatitis because SHN progresses to chronic active hepatitis or cirrhosis in about 30 percent of patients, has a mortality rate of about 20 percent and perhaps should be treated with corticosteroids or Azathioprine. SHN usually is caused by virus B (HAA). In contrast with classic hepatitis, patients having SHN usually are older (> 40 years), have a longer preicteric phase (> two weeks), have a higher serum bilirubin (> 15 mg. percent), lower albumin (< 3 g. percent) and more prolonged prothrombin time (< 60 percent). Also, a higher proportion of patients with SHN develop ascites, edema or hepatic encephalopathy (about 25 percent). SHN can be differentiated at an early stage from self-limited hepatitis by bridging necrosis and sublobular collapse on the liver biopsy.¹²

The finding of HAA in chronic liver disease has several important implications that require further investigation. The incidence of HAA in chronic non-alcoholic liver disease has not yet been established; certainly it varies among different populations. The new concept of viral etiology and slow viral infection in chronic liver disease suggests possible adverse effects of immunosuppressive or corticosteroid therapy¹³ and potential efficacy of anti-viral agents. Furthermore, until more is learned about the transmission of liver disease from patients with chronic viral liver disease or hepatitis-associated antigenemia, a hazardous carrier state should be assumed. HAA

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has been found in at least ten percent of the families of carriers. Thus, current recommendations for patients with persistent HAA include 1) scrupulous personal hygiene, especially hand washing after use of the toilet, 2) periodic determinations of serum transaminase and HAA among household or intimate contacts and 3) avoidance of activities such as food handling which might readily transmit the virus. □

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RE-LICENSURE AND CONTINUING EDUCATION

The importance of continuing education for physicians continues to draw attention. The latest happening comes from New Mexico where the state legislature passed a new law that ties re-licensure of medical doctors to continuing education programs. By late 1974 it will be necessary for a physician to show that he has logged in 120 hours of continuing education credit before he can have his license renewed.

The New Mexico law requires every three years a total of 120 hours must be spent at required courses. A physician may accumulate this number by attending AMA approved formal postgraduate programs, hospital staff scientific meetings and local medical society meetings. Although not involving itself in re-licensure, the Oregon State Medical Association has made continuing postgraduate education one of its requirements for continued membership. One county medical society in Oklahoma has done the same, the East Central Oklahoma Medical Society. □



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The male urogenital tract is by far the main source of reinfection in trichomonal vaginitis.

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Because of published reports of consistently high cure rates—often up to 100 percent—and a relatively low incidence of side effects, Flagyl has become the agent of choice for trichomonal vaginitis.

Indications: For the treatment of trichomoniasis in both male and female patients and the sexual partners of patients with a recurrence of the infection provided trichomonads have been demonstrated by wet smear or culture.

Contraindications: Evidence of or a history of blood dyscrasia, active organic disease of the central nervous system and the first trimester of pregnancy.

Warnings: Use with discretion during the second and third trimesters of pregnancy and restrict to patients not cured by topical measures. Flagyl (metronidazole) is secreted in the breast milk of nursing mothers. It is not known whether this can be injurious to the newborn.

Precautions: Mild leukopenia has been reported during Flagyl use; total and differential leukocyte counts are recommended before and after treatment with the drug, especially if a second course is necessary. Avoid alcoholic beverages during Flagyl therapy because abdominal cramps, vomiting and flushing may occur. Discontinue Flagyl promptly if abnormal neurologic signs occur. There is no accepted proof that Flagyl is effective against other organisms and it should not be used in the treatment of other conditions. Exacerbation of moniliasis may occur.

Adverse Reactions: Nausea, headache, anorexia, vomiting, diarrhea, epigastric distress, abdominal cramping, constipation, a metallic, sharp and unpleasant taste, furry or sore tongue, glossitis and stomatitis possibly associated with a sudden overgrowth of

Monilia, exacerbation of vaginal moniliasis, an occasional reversible moderate leukopenia, dizziness, vertigo, drowsiness, incoordination and ataxia, numbness or paresthesia of an extremity, fleeting joint pains, confusion, irritability, depression, insomnia, mild erythematous eruptions, "weakness," urticaria, flushing, dryness of the mouth, vagina or vulva, vaginal burning, pruritus, dysuria, cystitis, a sense of pelvic pressure, dyspareunia, fever, polyuria, incontinence, decrease of libido, nasal congestion, proctitis, pyuria and darkened urine have occurred in patients receiving the drug. Patients receiving Flagyl may experience abdominal distress, nausea, vomiting or headache if alcoholic beverages are consumed. The taste of alcoholic beverages may also be modified.

Dosage and Administration: *In the Female.* One 250-mg. tablet orally three times daily for ten days. Courses may be repeated if required in especially stubborn cases; in such patients an interval of four to six weeks between courses and total and differential leukocyte counts before, during and after treatment are recommended. Vaginal inserts of 500 mg. are available for use, particularly in stubborn cases. *When the vaginal inserts are used* one 500-mg. insert is placed high in the vaginal vault each day for ten days and the oral dosage is reduced to two 250-mg. tablets daily during the ten-day course of treatment. Do not use the vaginal inserts as the sole form of therapy. *In the Male.* Prescribe Flagyl only when trichomonads are demonstrated in the urogenital tract, one 250-mg. tablet two times daily for ten days. Flagyl should be taken by both partners over the same ten-day period when it is prescribed for the male in conjunction with the treatment of his female partner.

Dosage Forms: Oral tablets 250 mg.
Vaginal inserts 500 mg.

References available on request.

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35 mm. Medical Photography

T. J. BRICKNER, JR., M.D.
DAVID S. GOODEN, Ph.D.

Photography offers unique advantages in the recording of information for medical records. This paper presents a simple, highly flexible system for medical photography utilizing personnel normally present and inexpensive equipment.

PHYSICIANS ARE often faced with unique problems in recording information for later evaluation and presentation. This paper describes a complete photographic system which has been developed to effectively satisfy the physician's needs. The system has the appeal of being simple and economical. Residents, technicians, nurses or staff can be easily trained in its use.

The system has been developed and used with single lens reflex 35 mm. camera equipment. A through-the-lens light meter affords simplicity; however, a separate metering system can also be used with the same results. A single universal film, High Speed Ektachrome, Type B (EHB 135-20), is used exclusively. Ektachrome-B is a Kodak film for use with 3200 degree Kelvin Tungsten flood lamps. One-day commercial develop-

ing is available in most cities. Techniques have been devised to allow this film to be used for applications including the following:

- a) Normal daylight photography
- b) Indoor flood lamp photography
- c) Electronic strobe photography, including intraoral and intravaginal work
- d) Reproduction of X-rays
- e) Reproduction of material from books, charts, articles and color or black and white photographs including Polaroid prints
- f) Duplication of other 35 mm. or larger slides
- g) Color addition reproductions of special study radiographic procedures

TECHNIQUES

Normal daylight and electronic strobe photography

For this mode of operation, a B-52 filter must be used. This filter adjusts the effective "color temperature" of sunlight or the strobe to the 3200 degree Kelvin sensitivity of the Ektachrome-B film. Excellent quality color is obtained either indoors or outdoors.

Small inexpensive electronic strobes are usually sufficient for the "close-up" work of interest to physicians. It is useful to have an additional length of extension cable

so that the strobe may be held at angles and distances different from those of the camera itself. An ASA of 80 is used when the B-52 filter is placed on the camera for either outdoor photography, or as a guide number for the electronic strobe. The guide number is used in the usual manner as per the directions with the strobe unit. An exposure at the set-up parameters and one at an f stop on either side of the set-up assures a good quality slide when working up close with the strobe. The system has been used satisfactorily with macrolenses, bellows, extension rings and "plus" close-up lenses for skin and intraoral lesions.

For intraoral or intravaginal photographs the electronic strobe should be removed from the top of the camera and handheld along the barrel of the lens, to place the light source in the most direct line with the lens. Lighting for focusing and composition is easily obtained from a head lamp, such as used in intraoral and intravaginal examinations. If the strobe produces too much light under these conditions it can be partially covered with tape or covered by two or three layers of a white handkerchief.

Indoor floodlamp photography

For indoor exposures such as room layouts, treatment set-ups or full figure photographs, the physician may wish to use floodlamps. For these applications the camera is used with no filter and Westinghouse R-32, 3200 degree Kelvin lamps. The 3200 degree Kelvin lamps provide a very economical light source due to their long life (15 hours). With through-the-lens metering and an awareness of the shadows cast by the floods, the physician is able to produce professional quality slides.

Reproduction of X-rays

A work surface the size of an average desk is required. A single or paired set of Westinghouse R-32 photofloods are clamped to a block of wood or any upright holder and placed at one extreme of the desk. A 2" x 4" block of wood, approximately 16" in length, is grooved to accommodate an opaque piece of plexiglas (a discarded view box front) with a groove cut so that the plexiglas leans slightly toward the lamp.

This angulation or leaning of the plexiglas allows the radiograph to lie flat against the surface of the plexiglas. The radiograph is secured with a heavy duty clamp type paper clip or clothes pin at the top. The radiograph is backlighted by the 3200 degree photoflood and focusing is performed with the camera handheld. Tripod mounting of the camera is unnecessary and excellent reproductions can be made in rapid sequence.

The techniques for determining exposures for various types of radiographs are based somewhat on trial and error. Usually a light reading of the entire radiograph is made and the f stop increased or decreased depending on whether the brighter or darker portions are to be emphasized. Shutter speeds of 1/60 or 1/125 are used since the camera is handheld, and the f stop is generally around f-4.

In most instances the technique described above gives excellent black and white slides. It is to be noted, however, that slight voltage changes can cause a "color temperature" shift of the photoflood. This results in an overall bluish, bluish-green, or pinkish reproductions. For this reason, in exacting circumstances a small auto transformer and voltmeter may be used to assure that the floodlight is receiving the proper 115-120 volts. These "line voltage compensators" are easily constructed or readily purchased commercially from radio supply houses, as "AC power supplies" of 0-140 volts.

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David S. Gooden, Ph.D., graduated from the University of Missouri in 1970. His specialty is radiological physics and he is presently training X-ray technicians at the W. K. Warren Medical Research Center in Tulsa. He is affiliated with the Nuclear Medicine Society and the American Association of Physicists in Medicine.

Reproduction of printed material and photographs

The material to be copied is placed on a flat surface at a convenient height and lit with two 3200 Kelvin photofloods. The photofloods are directed at 45 degrees from either side. This prevents glare and provides a homogeneous light source. The camera is used with no filter and may be either handheld or tripod mounted. It is suggested that a light reading be taken from a skin toned surface or a standard 18 percent reflectance card such as a Kodak Neutral Test Card. If the reading is taken from a predominantly white background, such as ordinary typing paper, f stop readings should be reduced for the correct exposure. This can be done by dividing the film speed (ASA) or light index by 5; or roughly by closing down two to three f stops. The best light evaluation method is that of taking an incident light meter reading with the meter at the point the copy material is to be placed. This requires a separate exposure meter with an incident light dome. Once experience is gained in taking exposure readings, both black and white and colored material can be reproduced.

Reproduction of slides

Any type of commercially available slide copy holder with or without bellows can be used. The slides are to be backlit with the 3200 K lights on the plexiglas sheet. The through-the-lens meter reading is used and slides are copied as per the instructions on the slide copying attachment.

Color addition films for special study radiographic procedures

This technique has been developed to provide slides for presentation and teaching purposes. It employs a double exposure system of a single 35 mm. film with a combination of a red and blue filter, using a scout and post-injection film. The same equipment set-up used for the reproduction of X-rays is employed. However, in this case it is compulsory that the camera be rigidly tripod mounted, since perfectly aligned double exposures are necessary.

Approximately one-fourth of an inch is trimmed from the medial side of the scout

radiograph to facilitate positioning. This radiograph is then secured to the plexiglas with masking tape along one edge. The post-injection radiograph is then placed on top of the scout film and perfectly aligned with the use of a bright light. With the alignment accomplished, the post-injection film is secured to the plexiglas with the masking tape at the edge opposite that of the scout film. This gives an overlapping "swinging door" effect. This procedure allows a single radiograph to be backlit while assuring the same relative alignment.

An exposure is now made of the scout radiograph with a C-5 or No. 45 blue filter affixed to the camera. Through-the-lens metering is used with the indicated shutter speed reduced by a factor of two or the f stop reduced one, since a double exposure will be made. The scout film is then flipped away from the plexiglas and the post-injection film placed in the backlit position. Exposure of this film is then made on the same 35 mm. frame using an A-25 red filter. Again, through-the-lens metering is utilized with the indicated shutter speed reduced by a factor of two. For special procedures utilizing venous injections, the filter combinations can be reversed to highlight the veins in blue.

Perfect alignment of the entire system is necessary for quality reproductions with this system. Methods for obtaining intentional double exposures vary with camera make. It is suggested that one check his particular camera's operations manual before attempting reproduction of this type.

EQUIPMENT

1. Single lens reflex camera with through-the-lens metering system.
2. Filters—B-85, C-5, A-25.
3. Lamps—3200 degree Kelvin (such as Westinghouse R-32 photofloods).
4. Two clamp-on light bulb sockets.
5. One plexiglas view box front.
6. One piece of wood, 2" x 4" x 16".
7. One small electronic strobe.

6161 South Yale, Tulsa, Oklahoma 74136

Bacillus Subtilis Septicemia

Report of Two Cases

JOHN A. MOHR, M.D.
NED B. NICHOLS, M.D.

Two cases of septicemia caused by the not so "non-pathogenic" Bacillus subtilis.

In one patient the organism apparently entered the blood stream by way of an infected insect bite, in the other one the origin is unclear and his demise may have resulted from the production of nephrotoxic antibiotics by the microorganism.

THE *Bacillus subtilis* group is ordinarily considered non-pathogenic. However, this aerobic, gram positive, spore-forming rod has been associated with human infections occasionally, emphasizing the pathogenic potentialities of this ubiquitous saprophyte. The purpose of this paper is to present two cases of *B. subtilis* septicemia, with a brief review of the subject.

CASE REPORTS

Case No. 1

A 63-year-old man was admitted to the Veterans Administration Hospital on August 21, 1970 with a chief complaint of dull

aching abdominal pain, nausea, vomiting and constipation. He also complained of intermittent post prandial bloating. He denied fever, chills, hemoptysis, hematemesis or weight loss. On physical examination he appeared chronically ill but in no apparent distress. Blood pressure 120/78, pulse 94/minute and regular, respiration 14 per minute, temperature was 36.5 C° (oral). Pertinent physical findings included a moderately distended abdomen, hypoactive bowel sounds, hepatomegaly (five cm below the right costal margin) and a 3 x 3 cm mass in the anterior rectum. The white blood cell count was 9,000/mm³, hematocrit was 41 percent, blood sugar 112 percent, blood urea nitrogen 18 mg percent and a serum creatinine of .8 mg percent. The rectal mass was biopsied after local anesthesia. The biopsy specimen was read as adenocarcinoma metastatic, origin probably pancreas. The patient continued unchanged until August 30, 1970 when he became febrile, 101° F orally, and developed a productive cough. Trans-tracheal aspirates were cultured and grew *Bacillus subtilis*. The white blood cell count was 30,000/mm³ and x-rays of chest demonstrated a right perihilar infiltrate. Aqueous penicillin 10 million units per day and IPPB every four hours was begun without any change in clinical or radiographic findings.

On September 10, 1970 because of persistent infiltrate, fever, cough and the development of ascites the patient was bron-

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choscoped and a peritoneocentesis was done. Material from both sites and blood samples were cultured and all specimens grew *Bacillus subtilis* in pure culture. "Keflin[®]," one gram every six hours was added to the antibiotic regimen without any clinical change. Sputum smears and cultures for AFB and fungi were negative. The patient's course was characterized by progressive respiratory distress, a rising blood urea nitrogen and decreasing urine output. On September 27, 1970, although he continued normotensive, he became anuric and hypoxemic and expired on September 28, 1970.

Case No. 2

This was the first University Hospital admission for this 34-year-old female who was referred to this hospital because of fever, hypotension and a painful erythematous area on the anterior abdominal wall. The patient stated that three days prior to admission she was bitten on the anterior abdominal wall by an unidentified insect. Over the following two days the bite area became red, hot and swollen; on the day of admission she had chills, fever, nausea and "light headedness" and consulted her physician who referred the patient to the University Medical Center.

Physical Examination

The patient was a well developed somewhat obese woman who appeared quite ill. Her skin was hot and sweaty. BP 90/60 mm Hg, pulse 100 per minute, respirations 21 per minute, temperature 102° F (orally). The remainder of the pertinent physical findings were limited to the left anterior abdominal wall where a 9 x 10 cm erythematous and hot lesion was present. Induration and fluctuance were palpable. The peripheral blood leukocyte count was 14,000 per mm³, fasting blood sugar was 98 mg percent, blood urea nitrogen was 14 mg percent. The fluctuant area was aspirated and cultured as was the blood. Both specimens grew pure cultures of *Bacillus subtilis*. The patient's antibiotic therapy which included aqueous penicillin and chloromycetin was continued until drainage and induration were essentially cleared.

The patient was discharged on the eighth hospital day asymptomatic and has remained so during the two month follow-up period.

To our knowledge the first reported case of *B. subtilis* associated with human infection was reported by McFarland in 1898.¹ The most frequent afflictions in which *B. subtilis* has been isolated are infections of the eye and this most frequently occurs after trauma as reviewed by Francois.² The organism has been considered etiologic in cases of pyelonephritis, pneumonia, meningitis and prostatic abscesses as well as septicemia as reviewed by Cox, *et al.*³

The *Bacillus* genus comprises many aerobic, gram positive, spore-forming rods and includes *Bacillus anthracis*. Few laboratories attempt to distinguish the different species, other than the anthrax bacillus, referring to them all as *B. subtilis*.

An interesting point to speculate on in the first patient is the renal shutdown without evidence of hypotension. Was this hypotension or nephrotoxicity? Even though serum assays for antibiotics were not done in this patient it is known that the *Bacillus subtilis* group of organisms produces many antibiotics, primarily polypeptides, among which are subtilin, bacitracin, bacillin, eumycin and others, and bacitracin is especially nephrotoxic.⁴ Hence it seems possible that the renal shutdown in this patient may have been due to the elaboration of nephrotoxic substances by the offending organism. Because *B. subtilis* is not infrequently cultured from the blood of hospitalized patients it is usual-

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Ned B. Nichols, M.D., a 1963 graduate of the University of Minnesota Medical School, limits his practice to his specialty, internal medicine. He is now Assistant Professor in the Department of Medicine at the University of Oklahoma School of Medicine. He is a member of the Alpha Omega Alpha.

Septicemia / MOHR *et al.*

ly considered a contaminant.⁵ Kotin did blood cultures on 5,000 routine hospital admissions and obtained 665 positive cultures (13.3 percent positivity), while Reith and Squier⁶ cultured the blood of 293 healthy people and only 5.4 percent were positive for *B. subtilis*. Perhaps we do not give enough consideration to this organism when cultured from hospitalized patients, for bacteremia with *B. subtilis* may progress to septicemia and serious disease as indicated by our cases and those reported by others.^{7, 8, 9}

SUMMARY

Two cases of *Bacillus subtilis* septicemia are presented. In one patient the organism

apparently entered the blood stream by way of an infected insect bite. In the other the origin is unclear and his demise might have resulted from the production of nephrotoxic antibiotics by the microorganism. □

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AMPHETAMINES NOW NARCOTICS

For the purpose of regulation, amphetamines and methamphetamines are being classified as narcotics by the Bureau of Narcotics and Dangerous Drugs. A proposed regulation, published in the May 26th issue of the *Federal Register* would transfer the drugs from Schedule III to Schedule II of the Drug Abuse Control Act of 1970.

One major intent is to impose manufacturing quotas, thus limiting the amount of legitimate produced stimulants that can be diverted to illicit channels. The change would also require practicing physicians to keep more involved records on amphetamines. In particular, it would make additional requirements concerning ordering, inventory keeping and prescribing.

The AMA's House of Delegates supported the Bureau's action and called upon all physicians to "limit their use of amphetamines and other stimulant drugs to specific, well recognized medical indications." □

ARBOVIRAL ENCEPHALITIS

In Oklahoma last year there were two human cases of St. Louis encephalitis, with one death, and one case of Western Equine Encephalitis. These were the only three documented cases of arboviral encephalitis in over ten years. Because of these cases, the State Health Department is intensifying its surveillance for the coming four to five months. The virus causing these diseases can produce the syndromes of both aseptic meningitis and encephalitis. Asymptomatic infection is extremely common. It has been estimated in some urban epidemics of St. Louis encephalitis that there are 200 asymptomatic cases for every symptomatic one. The elderly seem particularly vulnerable to severe infection.

The State Health Department will be offering hemagglutination inhibition testing for arboviruses this year: This should allow earlier diagnosis of suspect cases. We would appreciate paired sera collected 14 to 21 days apart in all cases of encephalitis and aseptic



News From The Oklahoma State Department of Health

meningitis. If there is a rise in HI titer, a third serum collected six to eight weeks after the onset of the illness should be tested for complement fixing antibody to confirm the diagnosis.

Epidemics of St. Louis encephalitis have occurred in almost all the states bordering Oklahoma. With increased reporting and serologic testing we hope to define the extent of arboviral disease in this state. Selected hospitals in the state are also being asked to report all cases of suspected meningitis and encephalitis to the Health Department. We hope your efforts will provide the machinery to discover and head off any epidemic. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR MAY, 1971

Disease	May 1971	May 1970	April 1971	Total to Date	
				1971	1970
Amebiasis	11	10	3	31	22
Brucellosis	—	—	3	3	2
Chickenpox	31	435	51	152	2341
Encephalitis, infect.	—	1	1	8	8
Gonorrhea	515	501	524	2808	2396
Hepatitis, infect. and serum	62	43	59	298	222
Leptospirosis	1	—	—	1	—
Malaria	7	15	6	48	43
Meningococcal infections	—	1	—	4	11
Meningitis, aseptic	—	2	—	10	11
Mumps	28	689	26	171	2005
Rabies in animals	32	18	62	212	52
Rheumatic fever	4	—	3	12	4
Rocky Mt. spotted fever	4	5	1	6	7
Rubella	6	158	5	43	775
Rubella, congenital syn.	—	—	—	—	—
Rubeola	83	182	100	760	368
Salmonellosis	18	22	4	62	57
Shigellosis	7	13	2	35	40
Syphilis	112	114	102	559	682
Tetanus	—	—	—	—	—
Tuberculosis, new active	33	42	39	132	133
Tularemia	1	—	2	3	7
Typhoid fever	2	—	—	2	—
Whooping cough	1	2	—	7	8

U.S. Senate Passes Massive Manpower Bills

By a vote of 88 to nothing the United States Senate passed the **Health Professions Educational Assistance Amendments of 1971**, a five-year program which would authorize the appropriation of \$1.25 billion to aid medical schools. It included provisions for construction assistance and a program of loan guarantees and interest subsidies.

The bill authorizes \$350 million for the direct student loan program, increasing the maximum individual loan amount to \$3,500 per year. The bill includes loan forgiveness features of \$5,000 per year or 50 percent of an individual's outstanding loan, whichever is greater, for each year of service in an area of need in the practice of general, family, internal, or pediatric medicine. Loan forgiveness for the practice of other aspects of medicine in other professions is also authorized.

The bill was amended on the Senate floor to provide that a physician who practices in a medical shortage area for four years would receive an exemption from military service.

In addition to the direct loans, a guarantee program for student loans was also added. Under this program the federal government will act as a co-signer on a student's loan from a commercial loan agency.

A new special authority for grants to medical schools and hospitals for training programs in family medicine was included in the bill. A total of \$275 million was authorized to cover such grants.

Institutions would receive support grants varying in amounts depending upon the particular health profession. Schools of medicine, osteopathy, and dentistry would receive annual grants of \$50,000 plus \$4,000 for each full-time student enrolled.

Incentive awards are provided for increased enrollment, as well as for programs training physicians' assistants, dentists' assistants, or other health professions' assistants. A total of \$2.3 billion is authorized for institutional support of all schools.

The bill contained one provision which would encourage schools to accelerate their training courses. Such schools would receive \$6,000 for each fulltime student graduating under an accelerated, three-year curriculum. This would be \$2,000 per student more than would be received under the regular four-year curriculum.

Total appropriations called for in the omnibus assistance bill would amount to nearly \$5 billion over the next five years. □

Prescription Requirements Now More Rigid

With the passage of the Drug Abuse Prevention and Control Act of 1970, more rigid regulations were placed on the prescribing of drugs by physicians. In addition, all physicians were required to reregister for a new Bureau of Narcotics and Dangerous Drugs number to replace their old narcotic number.

Under the old law physicians were required to use their narcotic number on prescriptions for certain narcotic drugs. The new Controlled Substance Act categorizes drugs according to five schedules of controlled substances. Any time any item in one of the five schedules is prescribed, it is necessary for the physician to list his BNDD number on the prescription blank.

The following is an explanation, showing trade or product names

along with the generic or chemical names of the substances in each schedule:

Schedule I Substances: Drugs in this schedule have a high potential for abuse. In addition they have no currently accepted medical use in treatment in the United States. They cannot be prescribed by any physician without having special permission from the U. S. Department of Justice, Bureau of Narcotics and Dangerous Drugs. Such special permission is given only for experimentation purposes under closely supervised conditions. Substances in Schedule I include Heroin, Marijuana, LSD, Peyote, Mescaline, Psilocybin, Tetrahydrocannabinols, a large number of the various so-called "super" morphine derivatives, Nicocodeine, and others.

(A complete list of the drugs and substances in all five schedules was attached to the BNDD registration forms that most physicians received in April of this year. In case the list has been lost or misplaced, additional copies are available from the U. S. Department of Justice, Bureau of Narcotics and Dangerous Drugs, P. O. Box 28083, Central Station, Washington, D. C. 20005.)

Schedule II Substances: While the drugs and substances listed in Schedule II have a high potential for abuse, they have a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions. Abuse of these drugs or other substances may lead to severe psychological or physical dependence.

Most of the Schedule II substances have been known in the past as Class A narcotic drugs. One non-narcotic substance was included in this schedule when the law was passed. It is the liquid injectable form of methamphetamine. Since that time all amphetamines have been included in Schedule II.

Some examples of Schedule II narcotic substances are Opium, Morphine, Codeine, Dilaudid, Methadone, Demerol, Cocaine, Oxycodone (Percodan), Leritine, and Oxymorphone (Numorphan).

The amphetamines that are now included in Schedule II include the

trade name Reducing Aids that are well known.

Schedule III Substances: The drugs or substances in Schedule III have a potential for abuse that is less than those found in Schedules I and II. They have a currently accepted medical use in treatment in the United States although abuse of the drug or other substance may lead to moderate or low physical dependence or high psychological dependence. Schedule III contains those drugs that were formally known as Class B narcotics.

Other items include Glutethimide (Doriden), Phenmetrazine (Preludin), Methyprylon (Nodular), Methylphenidate (Ritalin), Chlorhexadol, Phencyclidine, Sulfondiethylmethane, Sulfonmethane, Nalophine, and Barbiturates (except Phenobarital, Methylphenobarital, and Barbitol). Paregoric is now listed in this schedule.

Schedule IV Substances: Drugs in this schedule have a low potential for abuse relative to the drugs or other substances in the first three schedules. They are currently accepted medically in the United States, but their abuse may lead to limited physical dependence or psychological dependence. Schedule IV Substances include drugs such as Barbitol, Phenobarbital, Methylphenobarbital, Chloral Betaine (Beta Chlor), Chloral Hydrate, Ethchlorvynol (Placidyl), Ethinamate (Valmid), Meprobamate (Equanil, Miltown), Paraldehyde, Methohexital, Librium and Valium.

Schedule V Substances: Drugs and substances listed in Schedule V have a very low potential for abuse and consist of those preparations formally known as "exempt narcotics," with the exception of Paregoric. Paregoric is now listed as a Schedule III Controlled Substance.

Under the new federal law Schedule II, or Class B Narcotics, may be authorized orally or in writing by the prescriber for up to five refills to be used within six months. This provision is the same as regulations on Barbiturates and Amphetamines under the old law.

Each of the five schedules contain a large number of drugs or substances listed by their generic or

chemical name. The few mentioned above are only representative of each of the lists. ☐

HMO Concept Set For Senate Hearings

The U. S. Senate Subcommittee on Health conducted two days of hearings on the administration's proposal for development of Health Maintenance Organizations, known as HMOs. Senate Bill 1182 creates a program of federal support, through loans, contracts and grants, for the planning, development, initial operation, and expansions of HMOs.

One of the first witnesses was Merlin K. DuVal, Jr., M.D., Assistant Secretary of Health and Scientific Affairs for the Department of HEW. Doctor DuVal was formerly a member of the OU Medical School staff. His testimony concentrated on the ability of prepaid group practice plans to meet the problems of rising costs, mal-distribution of medical manpower, and lack of access to comprehensive medical care.

Presenting the administration's proposal for encouraging the development of HMOs on a nationwide basis, Doctor DuVal stated that under the administration's formula an HMO would be required to provide emergency care, inpatient and physician care, outpatient physician care, and outpatient preventative medical services.

After stating that there is evidence that utilization rates are lower under HMO type plans, he pointed out that comparisons between HMOs and traditional systems are almost impossible. He went on to emphasize that HMOs would not replace the existing system but would provide an alternative system of health care delivery.

Regarding the cost of the administration's plan, Doctor DuVal estimated HMO care would cost about \$160 a year for each member of an enrolled family. (If the United States entire population of 250,000,000 people enrolled in HMOs, the estimated cost would be \$40 billion a year.)

Backhanded support for the HMO concept was received from a representative of the United Auto Work-

ers. While supporting the administration's objectives in creating HMOs, the Auto Workers were highly critical of the proposal as having "little substance." They pointed out that it failed to provide sufficient funds to bring about a meaningful shift from the present medical practice to the use of HMOs and failing to provide sufficient funding for planning and start of cost.

The UAW representative further criticized the plan for permitting development of profit oriented HMOs on the basis that quality and the extent of coverage might suffer if profit were the chief considerations of the organization. He also went on to criticize the lack of a requirement that consumers have an active role in the development of HMOs.

Words of caution were heard from John E. Winberg, M.D., Director of the Vermont Regional Medical Program. He testified that HMOs should be viewed as experiments in the delivery of health care. He emphasized that the impact of HMOs on the health status and quality of care is unknown and that the "... cost superiority of HMOs (is) still unproven ..."

It is expected that the subcommittee's hearings on HMOs will resume after the August recess of Congress. ☐

Board of Family Practice Announces Exams

The American Board of Family Practice announces that it will give the next examination for certification in various centers throughout the United States. The examination will be over a two-day period on April 29th-30th, 1972. Deadline for receiving completed applications in the board office is February 1st, 1972.

Information regarding the examination may be obtained by writing Nicholas J. Pisacano, M.D., Secretary, American Board of Family Practice, Inc., University of Kentucky Medical Center, Annex #2, Room 229, Lexington, Kentucky 40506. ☐



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Mills Says No NHI This Year

Representative Wilbur Mills (D-Ark.), powerful chairman of the House Ways and Means Committee, has told the American Medical News that there would be no national health insurance law this year. He pointed out that his committee would not begin hearings on the issue of national health insurance until after Labor Day and that this would forestall any possibility of Congressional enactment until the 1972 session.

While stating that his own views on national health insurance have not yet been formed, the representative indicated that he was definitely in favor of doing something in the area of catastrophic health insurance. He is also reported to be looking at "kiddy care" proposals. He has been conferring with former HEW Secretary Wilbur Cohen, who advanced the "kiddy care" idea when he was with HEW.

NHI hearings before the Ways and Means Committee are expected to last six or seven weeks. The staff of the committee has put together a booklet of "Basic Facts on the Health Industry" for use by committee members in considering the various health care financing proposals.

When asked about financing of national health insurance, Mills would only say that the federal government would not be able to absorb all of the additional costs and that, if any additional payroll taxes or trust funds are required, these should be entirely separated from the existing Social Security Trust Funds. He also expressed doubt that the bill finally enacted would be the Kennedy bill, even with its vocal support from organized labor, because of its projected cost.

The staff prepared booklet says, among other things, that 45 percent of the \$7.1 billion paid out by the private health insurance companies during the year 1968 went to **beneficiaries of government programs**. These involved Medicare, Medicaid and Champus (the medical program for the dependents of members of the armed forces). Some 70 percent of this government business was handled by Blue Cross.

The staff study also says that in 1969, 89 percent of all health insurance premium income was paid out in benefits. The retention rate—premium income used for expenses—varied from 2.2 percent for Blue Cross plans and 5.9 percent for group health plans to about 50 percent for individual insurance policies.

Chairman Mills' interest in "kiddy care" may have been inspired by a portion of the staff booklet which states that insurance protection for children under age 16 is "scanty." Less than one-fourth of poor children were found to have had hospital insurance protection in 1968. Disability due to illness or accident was found to be 50 percent higher for the poor than for the non-poor. The staff concluded that this emphasizes the point that "high expenses for medical care often place a hardship on those persons least able to afford it." □

Narcotics Commissioner Named For Oklahoma

Oklahoma's first Commissioner of Narcotics and Dangerous Drug Control has been appointed by State Attorney General Larry Derryberry. Arnold G. Mosley, formerly with the Department of Health in Oklahoma City was named to the new post.

The new commission was created as a part of the Oklahoma Uniform

Dangerous Control Substances Act. The commission's responsibilities will be in the area of coordination, enforcement, education, treatment, rehabilitation and research.

"The commission will also provide a system of registration for all professionals who have on occasion to either prescribe, administer and/or dispense dangerous substances," Mosley said. The new registration requirement will be in addition to the national Bureau of Narcotics and Dangerous Drug registration.

Mosley stated that the Oklahoma Narcotic registration applications would be mailed to all physicians during the month of November. Physicians will be required to give their M.D. license number and to pay a \$5 registration fee. When this is received by the Narcotics Commission, a state registration number will be issued. Although it is not necessary for the state number to appear on prescriptions, the physician will be required to maintain his registration certificate in his office.

The new commissioner said that one of the primary functions of the commission would be to educate parents at the local level through seminars and meetings held in communities around the state. Mosley has been working in this very area since he joined the State Health Department in 1963. Prior to that time he was Director of the State Division of Narcotic Enforcement under the State Attorney General's office.

Mosley's first function as Commissioner will be to build his staff. He said there would be a coordination with the Department of Education in working with communities and that he intended to use a team approach composed of a narcotic education specialist, psychologist, and social worker. □

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Medical Examiner Law Explained

Oklahoma's new Medical Examiner, Anthony J. Chapman, M.D., has issued a letter of explanation concerning what types of deaths constitute a medical examiner case. In his letter the pathologist points out there are seven categories into which medical examiner cases fall.

The seven categories are as follows: 1. By violence, 2. By unnatural manner, 3. By unusual manner, 4. By suspicious manner, 5. Without medical attendance, 6. Suddenly of persons in apparent health, 7. Death related to disease which might constitute a threat to public health.

The explanatory letter then went on with a detailed explanation of each of the seven categories as follows:

By violent, unusual, or unnatural manner: Any accident, suicide, or homicide resulting from physical, mechanical, chemical, electrical, thermal exposure or related means.

A medical examiner's investigation is required *irrespective of the period of survival following injury*. Also included are deaths due to criminal abortion, whether self induced or not.

By suspicious manner: Any death *suspected* to have resulted from an accident, suicide, or homicide.

Without medical attendance: This term should be reserved for the following situations: (1) Found dead without obvious or proper cause, (2) Unattended at any time by a licensed physician, (3) Unattended by a physician during a terminal illness, particularly if such illness appears unrelated to a disease previously diagnosed and treated, (4) Fetal death attended by a midwife.

Suddenly of person in apparent health: This term should be reserved for the following situations: (1) Apparently instantaneous death without obvious cause, (2) Death during or following an unexplained syncope or coma, (3) Death during an acute or unexplained rapidly fatal illness. This last heading is of interest chief-

ly because cases affecting the public health fall here frequently . . . for example, fatal undiagnosed meningococcal meningitis.

The examiner's newsletter went on, "It is emphasized that a non-violent death within 24 hours after hospital admission is *not necessarily* a medical examiner case. Patients dying shortly after entering the emergency rooms are not necessarily medical examiner cases. If the probable cause of death can be ascertained from the history and physical examination and if this cause of death can be said to be *natural*, a medical examiner's investigation is unnecessary."

"In general," the letter said, "the medical examiner should be notified if the deceased has not been treated for a fatal or potentially fatal illness within 14 days prior to the death. *All deaths following injury*, however, must be reported to the medical examiner. This rule applies regardless of the interval between injury and death, if the injury is in anyway related to the death." ☐

ANNOUNCING

"The Oklahoma Physicians' Forum" 1972 OSMA ANNUAL MEETING

A special session during the 1972 OSMA Scientific Assembly. An opportunity for you to present a medical paper.

Abstracts or manuscripts may be submitted for review and selection.

DEADLINE-October 1st, 1971

Mail your papers to the

**Oklahoma State Medical Association
601 N.W. Expressway, Oklahoma City, 73118**

Annual Meeting Plans Progressing

Dale Groom, M.D., Scientific Program Chairman for the 1972 Annual Assembly, has announced the confirmation of several outstanding nationally known speakers for the Oklahoma City meeting. A special Saturday afternoon session will feature Wilbur Cohen, former HEW Secretary, Richard Wilbur, M.D., former AMA executive, and Max Parrott, M.D., Chairman, AMA Board of Trustees. "We feel extremely fortunate to secure these talented and highly qualified speakers," explained Groom. "Their discussion will center around the 'future of medicine' and will offer opportunity for audience participation. There are other speakers who have not been confirmed but we are already assured of an excellent program with these."

The two and one-half day meeting will include scientific, socio-economic and social events.

"An innovation that should be

of special interest to our members is the 'Physicians' Forum' planned for Saturday morning. This program provides Oklahoma physicians the opportunity to present their own scientific views and findings," stated Groom. "We want to encourage those interested to submit their papers prior to October 1st." A review committee will select the papers to be presented. Additional details can be secured from the OSMA office.

The convention will be held at the Skirvin Hotel May 18th -20th. ☐

Physicians Offered Training in Pulmonary Disease

"On the job training" in chronic obstructive pulmonary disease is being offered to any interested physician in Oklahoma. The Pulmonary Disease Intensive Care educational program is offered at no charge, for a five-day period at the University of Oklahoma Medical Center Hos-

pital and is sponsored by the Oklahoma Regional Medical Program.

Objective of the program is to offer an opportunity for personalized tutorial sessions in actual patient care. Consequently there will be a limit of two physicians in the program at any one time. Areas to be covered are: Interpretation of blood gases; use of ventilators, both volume and pressure cycles in a clinical setting; use of bronchodilators and antibiotics; cardiac monitoring and cardiac drug usage; iatrogenic infections and pulmonary emergencies.

Interested physicians should contact C. Dowell Patterson, M.D., Director, Respiratory Care Unit, University of Oklahoma Medical Center, 800 N.E. 13th Street, Oklahoma City 73104 or phone 236-1366, extension 221.

Openings are available from September through December, 1971. Applicant should express first and second preference for the choice of dates he wishes to attend the program. ☐

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Medical Examiner Named



ANTHONY J. CHAPMAN

Anthony J. Chapman, M.D., a pathologist formerly in practice in Fort Worth, Texas, has assumed duties as Oklahoma State Medical Examiner. He succeeds James L. Luke,

M.D., who resigned and accepted appointment as medical examiner for Washington, D.C.

A 1964 graduate of Bowman Gray School of Medicine in North Carolina, Doctor Chapman completed his pathology residency at Baylor University Medical Center, Dallas, and served two years as a fellow in legal medicine and forensic pathology, Office of the Chief Medical Examiner and the Medical College of Virginia in Richmond.

One of the new examiner's first actions was to issue an explanatory letter regarding Oklahoma's Medical Examiner Laws. An article on this letter appears elsewhere in this issue of *The Journal*. □

Faculty Members Named Full Professors

Seventeen faculty members have advanced to the rank of full professor at the University of Oklahoma Medical Center. Promotions in the School of Medicine include Doctors Edward D. Frohlich, Clarence A. Guenter and Robert Lindeman, in

both medicine and physiology-biophysics; Doctors James W. Hampton, Paul C. Houk, A. William Shaffer and Jack D. Welsh, medicine; Doctor M. Jack Keyl, research urology; Doctor Walter H. Massion, physiology-biophysics and research surgery (he is also professor of anesthesiology); Doctors Joanne I. Moore and Jiro Nakano, pharmacology; Doctor Harold G. Muchmore, microbiology-immunology (he is also a professor of medicine); Doctor John B. Nettles, gynecology-obstetrics; Doctor Webb M. Thompson Jr., pediatrics; and Doctors Lazar R. Greenfield and Edwin Ide Smith, surgery.

In the School of Health, Doctor Thomas R. McGowan was promoted to professor of human ecology. Four members of the medical school's volunteer faculty were elevated to clinical professorships: Doctor Harry T. Avey Jr., in medicine; Doctor William A. Miller, orthopedic surgery; and Doctors Edward R. Munnell and Bob Jack Rutledge, surgery. □

AN ANNOUNCEMENT

On August 1, 1971, the physicians listed below became associated in the practice of Obstetrics and Gynecology. The group will continue in their building at 522 N.W. 13th Street, Oklahoma City, Oklahoma 73103.

J. M. Parrish, Jr., M.D., F.A.C.S.

Board Certified

William L. Bond, M.D.

Board Certified

Thomas H. Fraley, M.D.

Eligible for Board Certification

Morris S. Curry, M.D.

Eligible for Board Certification

Their practice will be limited to Obstetrics, Gynecology and malignant diseases connected with or associated with these specialties.

BNDD Registration Deadline Extended

The Bureau of Narcotics and Dangerous Drugs has extended to October 1st its deadline for use of physician registration number on prescriptions provided in the new Controlled Dangerous Substances Act. The Bureau has previously extended its May 1st deadline to July 29th.

Siting personnel shortages and the impossibility of processing all applications, BNDD stated that all physicians who have applied for registration but have not received a registration number may continue to practice without interruption. "They may prescribe, dispense, distribute, and conduct any such activity permitted by state law by indicating, instead of their BNDD number, that 'Federal Registration Applied For On (Date)'."

Residents and interns that are not licensed to practice medicine in Oklahoma may only write drug orders to be filled out of the drug room of the teaching institution they are in.

After October 1st, 1971, no activity with controlled substances will be permitted without the use of a valid BNDD Registration Number. ☐

New Charge Levels For Medicare and Medicaid

HEW has ordered all Part B Medicare carriers to update their charge screens for establishing customary and prevailing charges. The new charge screens are based on calendar year 1970 charge data and applied to claims received by the carriers after June 30th of this year.

Although the order applies only to Medicare Part B carriers, in Oklahoma it affects the Medicaid program since the Department of Public Welfare pays the same rate as Medicare.

Although there will probably be no great difference in the amount of reimbursement received by physicians, many will notice a slight increase in their amount of reimbursement.

In the event that a carrier lacks adequate statistical data for all of calendar year 1970, the fees previously in effect will be used. ☐



Valliant residents wait in line to receive personal health services from the McCurtain County Health Department mobile clinic.

Health Department Uses Mobile Health Clinic

Mobile Health Clinic, believed to be the first of its kind in the nation, is now traveling to communities in McCurtain County. The clinic is being sponsored by the Oklahoma State Health Department.

R. LeRoy Carpenter, M.D., State Health Commissioner, said, "We have taken one of our state health department mobile screening units and placed it at the disposal of the McCurtain County Health Department. We have hired a third nurse for the county who will be on duty with the mobile unit as it travels to communities in the county. Also, a home health aide will be working with the unit helping to operate the clinic."

Clinical services offered include x-rays, diabetes check, blood pressure check, blood test, diphtheria-pertussis-tetanus immunization, diphtheria-tetanus immunization, rubella immunization, rubeola immunization, oral polio immunization, tuberculin skin testing, glaucoma screening and family planning conferences.

During a three-day visit to Val-

liant, Oklahoma, personnel in the mobile screening unit provided services to 181 persons. Local newspapers carry schedules on the mobile unit's whereabouts so that persons in the community visited will know when the services will be available.

"This is an innovative type demonstration program which gives people the same services they could receive at the McCurtain County Health Department at Idabel," Carpenter said. "The great difference is that we are taking services to the people. This is great for those who have travel problems and for one reason or another cannot make a trip to the County Health Department." ☐

OSMA Directories Available

Additional copies of the 1971-72 OSMA Medical Directory are available to members for \$1.00 each. Contact the OSMA headquarters.

Scholarships Awarded

The Tulsa County Medical Society has awarded \$4,000 in scholarships to nine students of medicine and nursing for the 1971-72 school year.

C. S. Lewis, Jr., M.D., President, announced last month that the cash grants would go to:

Robert J. Coffey, 2734 East 3rd, a sophomore at the University of Oklahoma School of Medicine, \$600.

Edwin K. McClanahan, 1868 East 17th, a junior at the University of Oklahoma School of Medicine, \$600.

Harmon A. Nottingham, 1136 South Troost, a second-year student at Hillcrest Medical School of Nursing, \$250.

Deborah K. Yarberry, Oologah, a third-year student at Hillcrest Medical Center School of Nursing, \$250.

The Doctor Maxwell A. Johnson Memorial Scholarship, named for the Tulsa urologist and medical leader who died last February 23rd, was awarded to Michael A. Coffey, 1217 South 129th East Avenue, a sophomore at the University of Oklahoma School of Medicine, \$600.

The Doctor Luvern Hays Memorial Scholarship, created in memory of the Tulsa pediatrician who died in 1965, will go to:

Robert Carl Ingram, 42 North Lakewood, a sophomore at the University of Oklahoma School of Medicine, \$600.

Evelyn May Landon, Broken Arrow, a third-year student at Hillcrest Medical Center School of Nursing, \$250.

Scholarships provided by the Woman's Auxiliary to the Tulsa County Medical Society were given to:

Richard N. Marple, 1511 South 121st East Avenue, a junior at the University of Oklahoma School of Medicine, \$600.

Susan Marie Smith, 8179 East 31st Court, a third-year student at the University of Oklahoma Medical Center School of Nursing, \$250.

McClanahan, Ingram and Michael Coffey are previous recipients of the Medical Society scholarship awards.

This is the first year for the Doctor Maxwell A. Johnson Memorial

DEATH

JAMES T. COLWICK, JR., M.D.
1926-1971

James T. Colwick, Jr., M.D., 45-year-old Durant physician, died July 10th, 1971. A native of Durant, Doctor Colwick graduated from the University of Oklahoma School of Medicine in 1952 and the following year his practice was established in Durant.

He was active in many areas, having served as President of the Oklahoma Board of Regents for State Colleges, Councillor of the Bryan County Alumni Association for the OU Medical School and President of the Atoka-Bryan-Coal County Medical Society. He was a member of the Phi Chi medical fraternity and the Oklahoma Chapter of the American Academy of General Practice. □

Scholarship, which is supported by a special fund created by friends and professional associates.

The awards, given annually to students of medicine and health careers, are administered by the Scholarship Fund of the Tulsa County Medical Society, a non-profit educational and charitable foundation. □

Book Review

SYSTEMIC MYCOSES: A Ciba Foundation Symposium. Edited by G. E. W. Walstenholme and Ruth Porter. 287 pp. Boston: Little, Brown and Co., 1968. \$12.00.

This volume presents the proceedings of a Ciba Foundation Symposium held in Ibadan, Nigeria, in March 1967. It includes 13 essays by some 23 authors on a wide variety of topics relating to mycotic diseases ranging from organ distribution to clinical applications of anti-fungal antibiotics. The introduction pays tribute to one of the developers of Nigeria, William Balfour Baikie.

As in other Ciba Foundation Symposia, the discussions are comprehensive and constitute one of the most valuable aspects of the monograph. Although the sections dealing with therapy are quite extensive, many of the newer anti-fungal agents have not been included. It is also difficult to understand the emphasis given to the oral activity of amphotericin B in view of its repeated failures in clinical trials.

Workers concerned with fungus diseases will find this a valuable reference. *Harris D. Riley, Jr., M.D.*

Miscellaneous Advertisements

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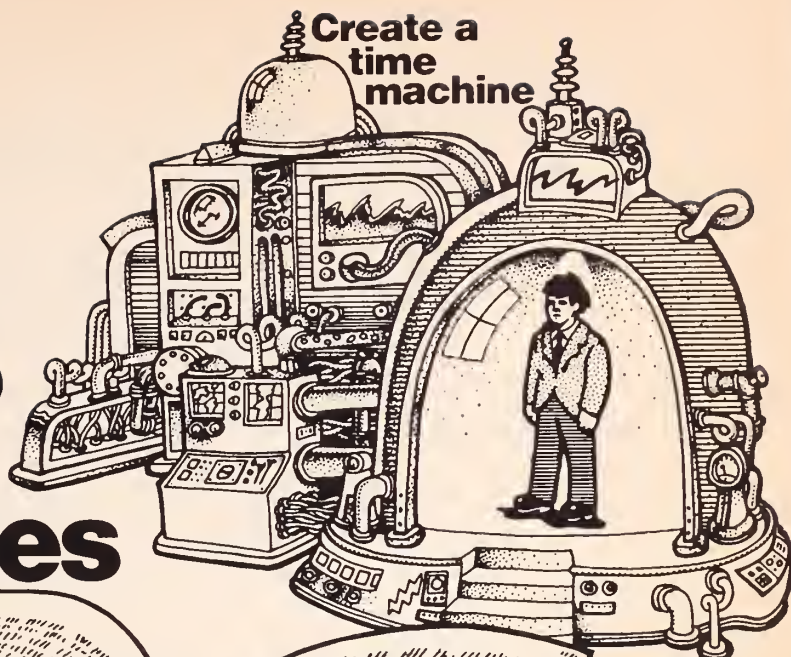
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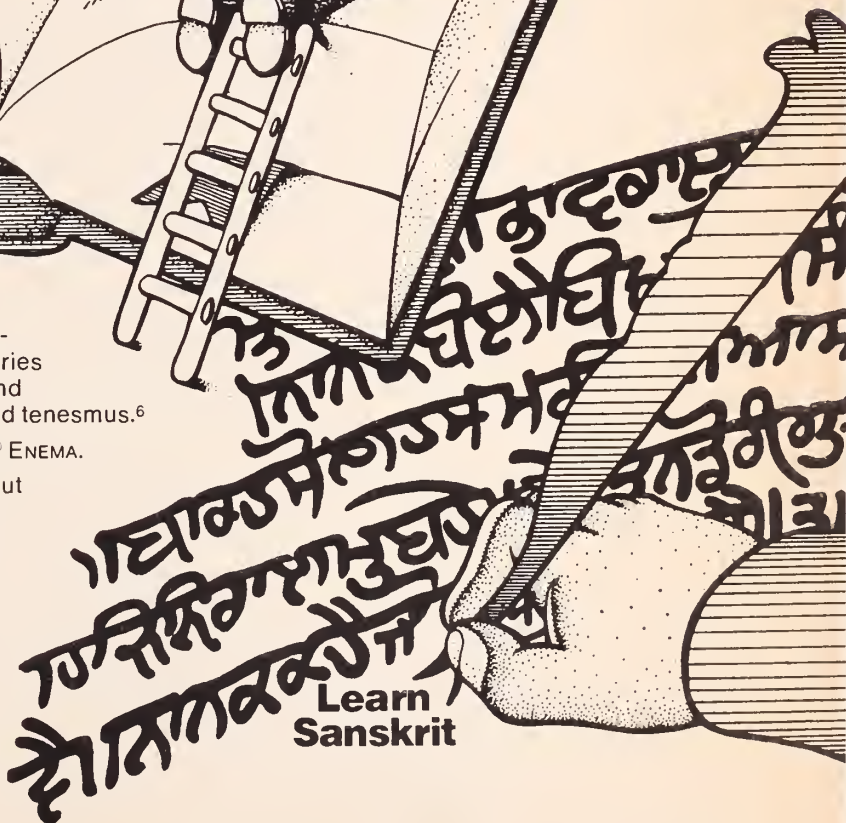
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Warning: Frequent or prolonged use of enemas may result in dependence. Take only when needed or when prescribed by a physician. Do not use when nausea, vomiting or abdominal pain is present. **Caution:** Do not administer to children under two years of age unless directed by a physician.

References: 1. Blumberg, N.: Med Times 91:45, Jan., 1963. 2. Sweeney, W. J., III: Amer J Obstet Gynec 85:908, Apr. 1, 1963. 3. Weinsaft, P.: J Amer Geriatr Soc 12:295, Mar., 1964. 4. Baydoun, A. B.: Amer J Obstet Gynec 85:905, Apr. 1, 1963. 5. Feder, I. A., Flores, A. and Weiss, J.: Amer J Gastroent 33:366, Mar., 1960. 6. Smith, J. J. and Schwartz, E. D.: Western J Surg 72:177, May-June, 1964



Call it what you will, it may be premalignant.

Before

3/29/67 Before therapy with 5%-FU cream. Patient P. T. shows a moderately severe solar keratotic involvement. Note residual scarring from the previous cryosurgical and electrosurgical procedures on forehead and ridge of nose adjacent to periauricular area.

After

6/12/67 Seven weeks after cessation of therapy. Reactions have subsided. Residual scarring is not seen except for that due to prior surgery. Inflammation has disappeared and face is clear of keratotic lesions.





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**Call it actinic, solar or senile keratoses,
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Usual duration of therapy, 2 to 4 weeks.

Studies showed that with the 2% and 5% Efudex preparations, the usual duration of therapy was only 2 to 4 weeks.⁵ Other studies with topical fluorouracil revealed that when concentrations of less than 2% were used, significant numbers of lesions recurred.⁶

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Numerous lesions, not apparent prior to 2% and 5% Efudex therapy, manifested themselves by definite reactions, while intervening skin remained relatively unaffected.⁵ The early eradication of these subclinical lesions (which may otherwise have undergone further progression) probably accounts for the reduced incidence of future solar keratoses in patients treated with topical fluorouracil—especially with 5% concentrations.⁶

How to identify solar keratoses.

Typically, the lesion—a flat or slightly elevated brown to red-brown papule—is dry, rough, adherent and sharply defined. Multiple lesions are the rule.

Predictable therapeutic response.

The response to a typical course of Efudex therapy is usually characteristic and predictable. After 3 or 4 days of treatment, erythema begins to appear in the area of keratoses. This is followed by a moderate to intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of this response generally occurs two weeks after the start of therapy and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. Lesions that do not respond should be biopsied.

References: 1. Allen, A. C.: *The Skin, A Clinicopathological Treatise*, ed. 2, New York, Grune & Stratton, 1967, p. 842. 2. Dillaha, C. J.; Jansen, G. T. and Honeycutt, W. M.: "Treatment of Actinic Keratoses with Topical Fluorouracil," in Waisman, M. (ed.): *Pharmaceutical Therapeutics in Dermatology*, Springfield, Ill., Charles C Thomas, 1968, p. 92. 3. Belisario, J. C.: *Cutis*, 6:293, 1970. 4. Sams, W. M.: *Arch. Derm.*, 97:14, 1968. 5. Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey. 6. Williams, A. C., and Klein, E.: *Cancer*, 25:450, 1970.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used, may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppurative, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

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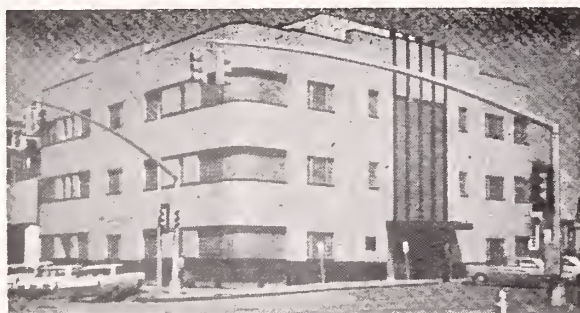
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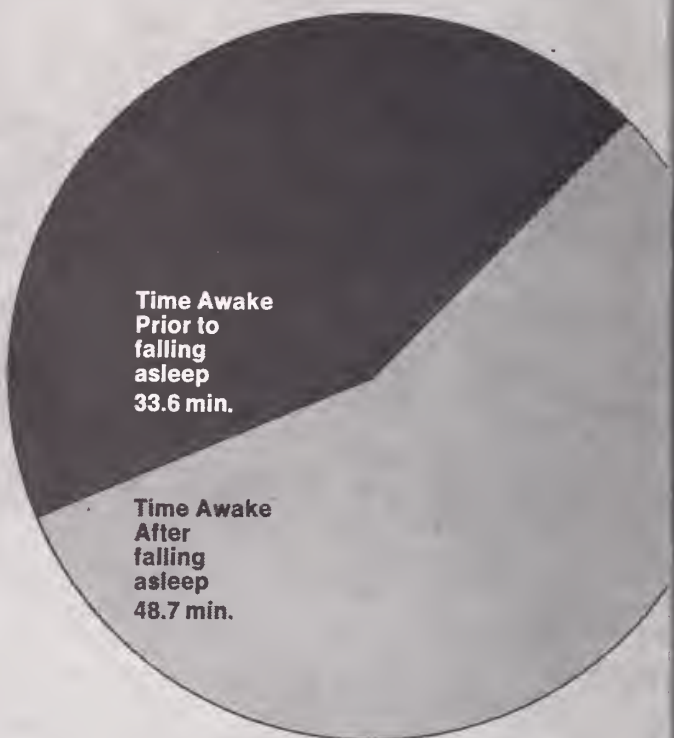
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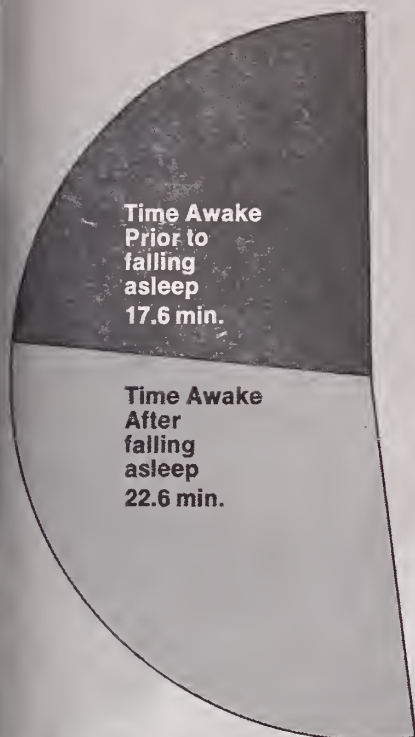
2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

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Indications: Effective in acute, recurrent or chronic urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) and in the absence of obstructive uropathy or foreign bodies. *Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response. Add aminobenzoic acid to culture media of patients receiving sulfonamides. Resistant organisms present a current problem to the usefulness of antibacterial agents. Blood levels should be measured in patients receiving sulfonamides for serious infections, since there may be wide variations with identical doses; 20 mg/100 ml should be the maximum total sulfonamide level, as adverse reactions occur more frequently above this level.

Contraindications: Sulfonamide hypersensitivity; infants

less than 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis); pregnancy at term and during nursing period.

Warnings: Safe use in pregnancy has not been established, and teratogenicity potential has not been thoroughly investigated. Sulfonamides will not eradicate or prevent sequelae to group A streptococcal infections, *i.e.*, rheumatic fever, glomerulonephritis. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported; early clinical signs such as sore throat, fever, pallor, purpura or jaundice may indicate serious blood disorders. Complete blood counts and urinalysis with careful microscopic examination are recommended frequently during sulfonamide therapy. Clinical data are insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Use with caution in patients with impaired renal or hepatic function, severe allergy, bronchial asthma and in glucose-6-phosphate dehydrogenase-deficient indi-



4:30 a.m. Effective through the night. Each dose of Gantanol (sulfamethoxazole) delivers up to 12 hours of antibacterial action against susceptible

pathogens, such as *E. coli*, *Klebsiella-Aerobacter*, *S. aureus* and others. Action all day. And action all night to prevent retained urine from becoming the medium for bacterial proliferation.

7:30 a.m. With a built-in margin of protection. Gantanol *b.i.d.* therapy means rapid symptomatic improvement, often in 24 to 48 hours, for most patients with nonobstructed urinary tract infections.

in nonobstructed urinary tract infections

Gantanol[®] B.I.D. (sulfamethoxazole)

Tablets/Suspension

12 hours of therapy with every dose



viduals. In the latter, dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *allergic reactions:* erythema multiforme (Stevens-Johnson syndrome), skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *gastrointestinal reactions:* nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; and *miscellaneous reactions:* drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities with some goitrogens, diuretics (aceta-

zolamide and thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age, except adjunctively with pyrimethamine in congenital toxoplasmosis. Usual dosage is as follows:

Adults—2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection. *Children*—0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, followed by 0.25 Gm/20 lbs *b.i.d.* Maximum dose for children should not exceed 75 mg/kg/24 hrs.

Supplied: Each tablet or teaspoonful (5 ml) of suspension contains 0.5 Gm sulfamethoxazole.



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SALUTENSIN®

hydroflumethiazide, 50 mg./reserpine, 0.125 mg./ protoveratrine A, 0.2 mg.

Brief Summary of

Prescribing Information—9-9/22/69.

For complete information consult Official Package Circular.

Indications: Essential hypertension. Use cautiously in patients with renal insufficiency, particularly if they are digitalized.

Contraindications: Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

Warnings: Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distension, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients. **Use in Pregnancy:** Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokaliemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss or protoveratrine A may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Stop therapy if protoveratrine A induces digitalis intoxication.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or *bronchial asthma* and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

Adverse Reactions: *Hydroflumethiazide:* Skin rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation. *Reserpine:* Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares. *Protoveratrine A:* Nausea, vomiting, cardiac arrhythmia, prostration, blurring vision, mental confusion, excessive hypotension and bradycardia. (Treat bradycardia with atropine and hypotension with vasopressors.)

Usual Dose: 1 tablet b.i.d.

Supplied: Bottles of 60, 600, and 1000 scored 50 mg. tablets.

Service items pictured at right and Salutensin samples are available on request from your Bristol Representative or on written request.

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*Following my Doctor's
good advice...*

HEALTHY EATING HABITS FOR THE HYPERTENSIVE

*No problem dieting
with this to advise me.*



*Dining out—
on my diet!*



*Getting the exercise
I need—*

HINTS TO HELP MAKE HYPERTENSION EASIER TO LIVE WITH:

- Get plenty of sleep.
8 hours a night is good, and
a nap a day is better.
- Avoid strenuous activities
that you aren't used to.
- Drink alcoholic beverages
only in moderation.
- Don't smoke,
Especially cigarettes.
- Try to avoid undue emotional
strain and tension.
- Guide your eating habits by
the restrictions on the
reverse of this reminder card.

This goes where I go...

PATIENT'S NAME *Mrs. S. Collins*

AGE *55* DATE

Rx

Salutensin no. 30

*Sig: one tablet
twice daily*

A. Fox M.D.

SALUTENSIN®

hydroflumethiazide, 50 mg./reserpine,
0.125 mg./protoveratrine A, 0.2 mg.

*This helps make
my hypertension
easier to live with, too.*



Empirin[®] Compound with Codeine, gr. 1/2 or gr. 1


Helps overpower pain

Each tablet contains: aspirin gr. 3 1/2,
phenacetin gr. 2 1/2, caffeine gr. 1/2.

No. 3 contains codeine phosphate* (32.4 mg.) gr. 1/2.

No. 4 contains codeine phosphate* (64.8 mg.) gr. 1.

* (Warning—may be habit forming.)

 Empirin Compound with Codeine is now classified in Schedule III.
Available on oral prescription and may be refilled 5 times
within 6 months, unless restricted by State law.

Complete literature available on request from Professional Services Dept. PML.



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Additional information available to the profession on request.

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Lidon

gastritis

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G-I symptoms
demand
a potent
synthetic
anticholinergic**

**move up to
“the Robinul
response”**

In treating hypersecretion and hypermotility associated with gastritis are you disappointed in the results you've been getting with some of the synthetics?

Then *move up* to a potent anticholinergic—Robinul® Forte (2 mg. glycopyrrolate).

It provides prompt, pronounced, prolonged suppression of gastric hypersecretion, making it a highly effective agent in gastritis and other upper G-I conditions associated with hypersecretion and hypermotility.

Because Robinul Forte exerts a profound antispasmodic action, it is also useful in the treatment of lower G-I disorders, such as functional bowel distress and spastic and irritable colon. If the patient has a “one tract mind” concerning his condition, you can help control the anxiety and tenseness by prescribing Robinul®-PH Forte (2 mg. glycopyrrolate with 16.2 mg. phenobarbital—warning: may be habit forming).

Robinul® 2mg. Forte (glycopyrrolate)

■ **INDICATIONS** Robinul Forte (glycopyrrolate, 2 mg.) and Robinul-PH Forte are double-strength dosage forms of glycopyrrolate. They are primarily indicated for patients who are less responsive to anticholinergic therapy and for control of the more prominent symptomatology associated with acute episodes of gastrointestinal disorders. Emphasis should be on total management, with due consideration of the various therapeutic modalities available, including diet, antacids, anticholinergic agents, sedatives, and attention to emotional problems. Accordingly, glycopyrrolate is recommended in the management of gastrointestinal disorders amenable to anticholinergic therapy, such as: (1) duodenal ulcer, duodenitis, pylorospasm; (2) gastric ulcer, gastritis, esophageal hiatal hernia, hyperchlorhydria, pyrosis, aerophagia, gastroenteritis; (3) esophagitis; (4) cholecystitis, chronic pancreatitis; (5) spastic and irritable colon, ulcerative colitis, functional bowel distress, diverticulitis, acute enteritis, diarrhea; and (6) splenic flexure syndrome, neurogenic gastrointestinal disturbances. When these conditions are associated with psychic overlay, the formulation with phenobarbital may be indicated. ■ **CONTRAINDICATIONS** Glaucoma, urinary bladder neck obstruction, pyloric obstruction, stenosis with significant gastric retention, prostatic hypertrophy, duodenal obstruction, cardiospasm (megaesophagus), and achalasia of the esophagus, and in the case of Robinul-PH Forte (glycopyrrolate with phenobarbital), sensitivity to phenobarbital. ■ **PRECAUTIONS** Administer with caution in the presence of incipient glaucoma. ■ **SIDE EFFECTS** The most frequent side effect noted during clinical trials was dry mouth. Thirty-three (3.3%) of 1,009 patients receiving 1 to 32 mg. of glycopyrrolate a day complained of dry mouth of moderate to severe degree, but only 11 discontinued treatment because of this. Blurred vision, constipation, and urinary hesitancy have been reported infrequently. Other side effects associated with the use of anticholinergic drugs include: tachycardia, palpitation, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, drowsiness, and rash. ■ **DOSAGE** The average and maximum recommended dose of Robinul Forte (glycopyrrolate, 2 mg.) or Robinul-PH Forte is one tablet three times daily (in the morning, early afternoon, and at bedtime). To obtain optimum results, dosage should be adjusted to the individual patient's response. After the more severe symptoms associated with acute conditions have subsided, the dose may be reduced to the minimum required to maintain symptomatic relief. ■ **SUPPLY** Robinul Forte (glycopyrrolate, 2 mg.) is available as scored, compressed pink tablets engraved AHR/2 in bottles of 100 and 500. ■ Robinul-PH Forte (glycopyrrolate, 2 mg., with phenobarbital, 16.2 mg.) is available as scored, compressed blue tablets engraved AHR/2 in bottles of 100 and 500.

A. H. Robins Company, Richmond, Va.

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	each tablet, capsule or 5 cc. teaspoonful of elixir (23% alcohol)	each Donnatal No. 2	each Extentab®
hyoscyamine sulfate	0.1037 mg.	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0194 mg.	0.0582 mg.
hyoscine hydrobromide	0.0065 mg.	0.0065 mg.	0.0195 mg.
phenobarbital (warning: may be habit forming)	($\frac{1}{4}$ gr.) 16.2 mg.	($\frac{1}{2}$ gr.) 32.4 mg.	($\frac{3}{4}$ gr.) 48.6 mg.

Brief summary. Side effects: Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction as in prostatic hypertrophy. Contraindicated in patients with acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.



LEMON TREE SO VERY PRETTY,
AND THE LEMON FLOWER IS SWEET.
BUT ONE HUNDRED EIGHTY LEMONS,
IS IMPOSSIBLE TO EAT.

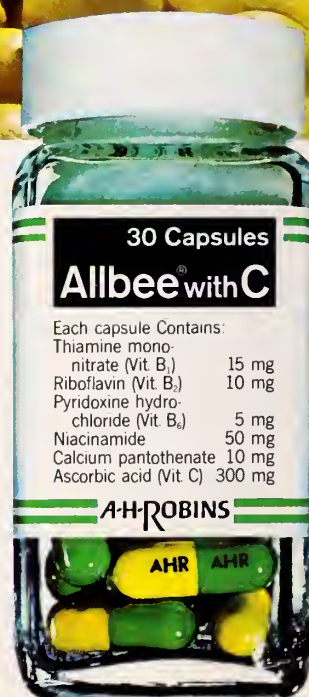
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IN KEY OF C

2 ways to provide a month's therapeutic supply of Vitamin C: 180 lemons or 30 Allbee with C

As a source of ascorbic acid, the lemon really hits a high C (50 mg.). But your patient would still have to eat 180 lemons every month—6 a day—to get a therapeutic dose. And as the calypso singer puts it, "one hundred eighty lemons is impossible to eat." Fortunately, a bottle of 30 Allbee with C capsules (taken one capsule daily) supplies as much Vitamin C as all those lemons, plus full therapeutic amounts of the B-complex vitamins. For example, as much B₆ as two pounds of corn. Allbee with C is no lemon! This handy bottle of 30 capsules gives your patient a month's supply at a very reasonable cost. Also the economy size of 100. Available at pharmacies on your prescription or recommendation.

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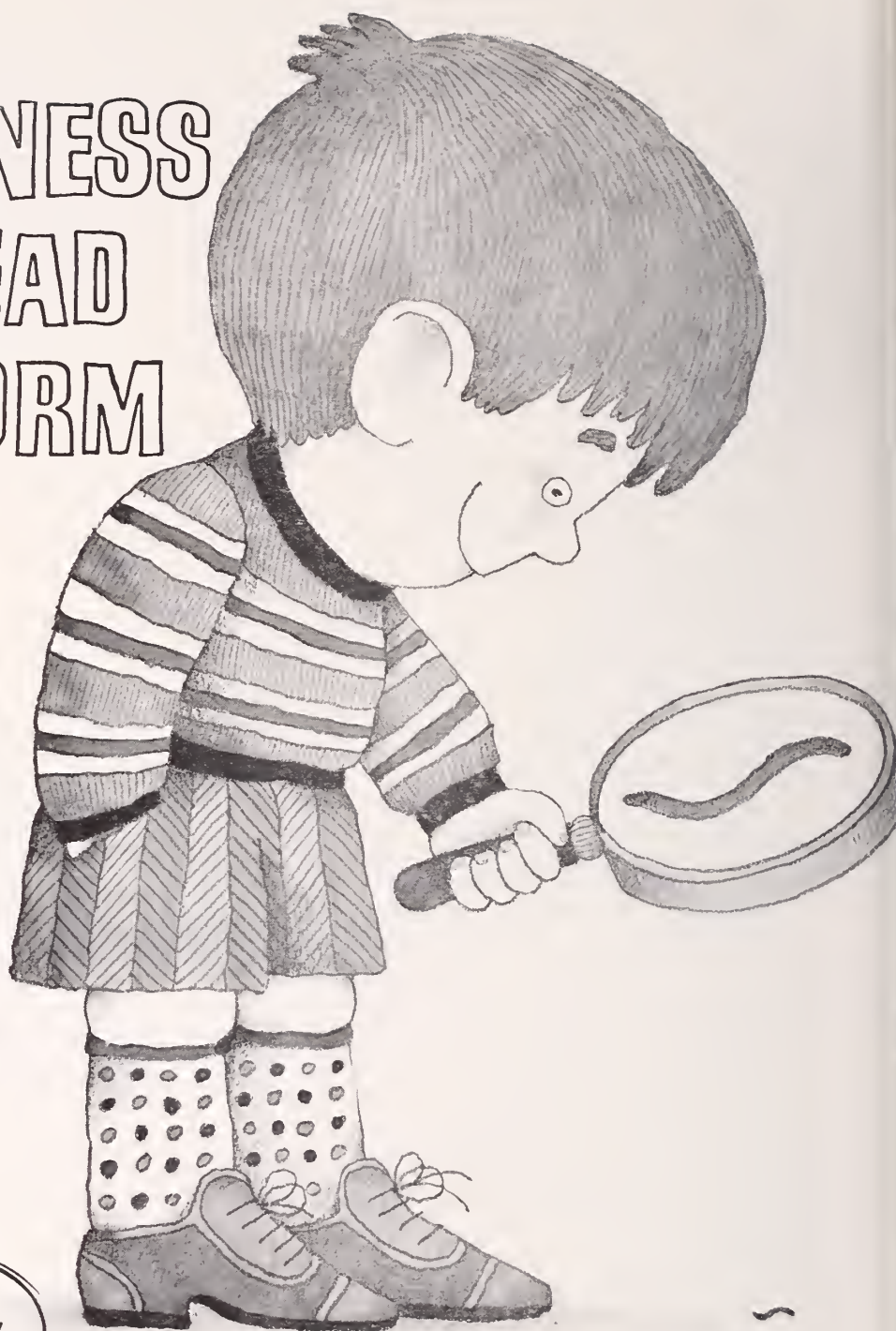
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*Mintezol[®]
is nonstaining*

MINTEZOL[®]

(THIABENDAZOLE [MSD])

SUSPENSION, 500 mg per 5 cc

You'll rely on MINTEZOL (Thiabendazole, MSD) often for pinworm disease. Not just because that's a very common helminthic infestation, but because MINTEZOL has such a high degree of efficacy. MINTEZOL also provides an unusually wide range of action—against threadworm, hookworm, whipworm, and large roundworm disease. This broad spectrum of activity makes it particularly effective in these mixed worm infestations. MINTEZOL isn't a dye. So you won't hear complaints about stained teeth, clothing, or bed linen. The most frequently occurring side effects have been anorexia, nausea, vomiting, and dizziness.



Contraindications: History of hypersensitivity to thiabendazole.

Warnings: May impair alertness; operation of automobiles and other activities made hazardous by diminished alertness should be avoided. If hypersensitivity reactions occur, drug should be discontinued immediately and not resumed; erythema multiforme, including Stevens-Johnson syndrome (with a fatal case), has been associated with thiabendazole therapy in children. Safe use in pregnancy or lactation has not been established.

Precautions: Since thiabendazole is metabolized in the liver and excreted by the kidneys, hepatic and renal function should be carefully monitored in patients with dysfunction of these organs.

Adverse Reactions: Frequently encountered are anorexia, nausea, vomiting, and dizziness. Less frequently, diarrhea, epigastric distress,

pruritus, weariness, drowsiness, giddiness, and headache have occurred. Rarely, tinnitus, collapse, abnormal sensation in eyes, blurring of vision, hyperirritability, numbness, hyperglycemia, xanthopsia, enuresis, perianal rash, cholestasis and parenchymal liver damage, hypotension, and a transitory rise in cephalin flocculation and SGOT. Hypersensitivity reactions include: fever, facial flush, chills, conjunctival injection, angioedema, anaphylaxis, skin rashes, erythema multiforme (including Stevens-Johnson syndrome), and lymphadenopathy. Appearance of live *Ascaris* in the mouth and nose has been reported on rare occasions.

Some patients may excrete a metabolite which imparts an odor to urine, much like that which occurs after ingestion of asparagus. Crystalluria without hematuria has been reported on occasion, but has promptly subsided with dis-

continuation of therapy; while the etiologic role of thiabendazole has not been established, the possibility of crystalluria should be kept in mind. Transient leukopenia has been reported in a few patients, but the cause and effect relationship in these cases has not been established.

NOTE: In children weighing less than 30 pounds, clinical experience with thiabendazole for treatment of intestinal parasitosis has been limited. Thus, the benefits of this therapy should be weighed against the possibility of adverse reactions.

Supplied: Suspension, containing 500 mg per 5 cc, in bottles of 120 cc.

For more detailed information, consult your MSD representative or see the Direction Circular. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

MSD MERCK SHARP & DOHME

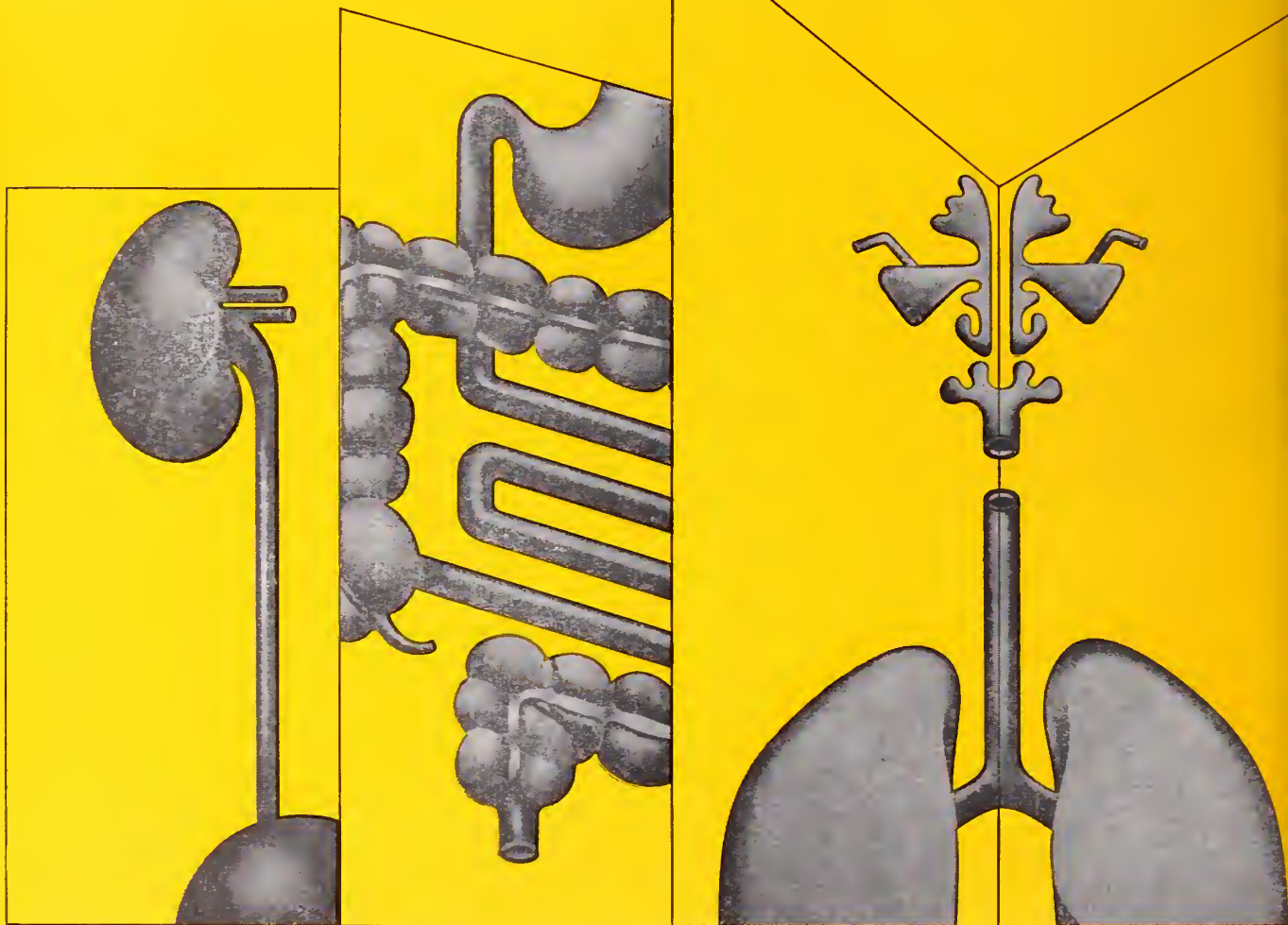
Tract Record.

A record of clinical efficacy in treating bacterial infections of the respiratory, genitourinary and gastrointestinal tracts caused by susceptible strains of pneumococci, *H. influenzae*, staphylococci, streptococci, *Klebsiellae*, *E. coli*, *Enterobacter*, *Shigella*.

A record of years of dependable broad-spectrum activity.

A record of high urine and serum antibiotic levels all with a 500mg. potency, b.i.d. convenience and low prescription cost.

Tetrex[®]
bidCAPS[®]
(500mg.
tetracycline
phosphate
complex)



For complete information consult Official Package Circular.

(4) 2 5 71

Indications: Infections due to *Rickettsiae*, *Mycoplasma pneumoniae* (PPLO, Eaton agent), agents of psittacosis, Lymphogranuloma venereum, the spirochetal agent of relapsing fever.

Also infections due to Gram-positive and Gram-negative organisms, when bacteriologic testing indicates appropriate susceptibility to the drug.

Contraindications: Hypersensitivity to tetracyclines.

Warnings: Photodynamic reactions have been produced by tetracyclines. Natural and artificial sun-

light should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used and serum estimations may be necessary with prolonged therapy. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood).

Precautions: Mycotic or bacterial superinfection may occur. Cases of gonorrhea with a suspected primary lesion of syphilis should have darkfield examinations before receiving treatment. In all other cases where concomitant

syphilis is suspected, monthly serological tests should be performed for at least 4 months.

Plasma prothrombin levels may be depressed, patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage. In long-term therapy, periodic laboratory evaluation of hematopoietic, renal and hepatic organ systems should be performed.

Adverse Reactions: Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. Infants may develop increased intracranial pressure with bulging fontanels. Hemolytic anemia, thrombocytopenia, neu-

tropenia, and eosinophilia have been reported.

Usual Dose: Usual Adult Dose: One Gm./day in 2 or 4 equally divided doses. Continue therapy for ten days in Group A beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals.

Supplied: Capsules—250 mg. in bottles of 16 and 100. bidCAPS—500 mg. in bottles of 16 and 50. A.H.F.S. Category 8:12

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Self-Evaluation: Medical Activist

DO YOU KNOW how to satisfy the nation's needs for health care services? Do you believe that greed and mercenarism are the major motives of the physician who enters conventional practice today? Are you convinced that providing medical care is a simple matter of getting the patient to the doctor or vice versa? Do you agree that a tax-supported, government-supervised program is the best solution to the problem?

If your responses to most of these questions are affirmative, you should consider becoming . . . or you already are . . . a medical activist. If you are interested in finding out how good an activist you can be, test yourself with the questions below. Your answers will provide a profile of your knowledge and clearly reveal your areas of weakness. Good luck!

1. If each of us has a right to be provided good medical care, why don't we also have a right to be provided an adequate, well-balanced diet; protection from the elements and extremes of temperature; sanitary plumbing; drugs and dentures?

2. Name one government-operated agency or one government-sponsored program that could be described as efficient, economical or immune to political manipulation.

3. List the name of one tax-supported hospital, clinic or medical care facility that has a lower cost/patient-day ratio or a shorter average patient-stay rate than a similar non-tax-supported facility.

4. Name five of your non-physician acquaintances who know more about the delivery of health care services than you do.

5. Outline a method whereby one who has never practiced medicine can supervise, with alacrity and wisdom, those who do.

6. You have agreed to contribute five hours of your time each month to a free clinic. Who is responsible for maintaining records on the patients you see? Where are these records kept? When the patient asks that summaries or copies of these records

be sent to an attorney or another physician or an insurance company, who provides the necessary secretarial services?

7. Outline what you would do if fifteen of the people you counseled in the free clinic last week appeared in your office demanding care. Would you refuse them and risk an abandonment suit? If you agreed to see them, would you ask your nurse and your receptionist to work overtime? And if in doing so, you extended their work-week beyond the legal maximum number of hours, what punitive action would be taken against you?

8. Describe a situation where a licensed, practicing physician is not wholly and completely liable for his professional services.

9. Give the name of a single piece of legislation enacted in the past fifty years which has reduced the cost or decreased the liability involved in providing medical care.

10. Name one other nation in the world where the rate of increase of highly qualified physicians is three times the rate of increase of the general population.

11. Name another profession whose members have made equivalent contributions of money and time to the students engaged in the study of that profession.

12. List the names of ten recently graduated high school students who would volunteer to finance and complete a nine to fifteen year course of arduous study in order to become an employee of the federal government, supervised and controlled by politicians and bureaucrats.

If you have completed all the questions, congratulations! You are exceptionally well-informed and can look forward to a brilliant career as an activist. We hope you find it rewarding. *MRJ* ☐

ABORTION ON DEMAND—YES OR NO?



In a recent issue of this Journal (July) a concise and convincing editorial on abortion was written by Dr. James Merrill, a highly respected member and learned professor of the University of Oklahoma Medical School. He

touched upon the psychological, medical and socio-economic aspects involved, and maintained that since it is not possible to legislate morality, the legislation should be reformed or abolished. Granted that his reasons were clear cut and forcible, the abortion issue is still so controversial that caution is called for and pertinent legislation as it now exists should not be dismissed or modified overnight.

The literature on abortion, medical and otherwise, is voluminous, pro and con. We as physicians tend to disregard moral aspects because our main concern is for the patient. Yet it is obligatory and incumbent upon each of us to not disregard the moral factors involved. Preservation of good morals should also be a goal of lawmakers and governments. It was a deterioration of morals which in part led to the fall of the Holy Roman Empire. This conclusion is not original. It has been expressed by many more knowledgeable and learned individuals than myself. In our civilized society we see signs and symptoms which indicate a regression rather than progression. Witness the problem of the increase in crime rate, alcoholism and drug abuse, irreligion and our attitudes concerning sex as manifested by sexual permissiveness and free love.

What is the moral issue in abortion? It concerns the destruction of a living organism in the mother's womb. This embryo or fetus, if alive, has as much right to live as the mother who conceived it. This living being cannot be disposed of as one might dispose of an unwanted newborn kitten or puppy. Even the kitten or puppy may receive some measure of sympathy and consideration. The unborn child is not a parasite and it possesses the right to be permitted to develop as a person and become a member of the human race.

Pregnancy may be an imposition on the mother. The elimination of a pregnancy is an imposition on the unborn child. In the former the imposition is temporary, in the latter there is a finality which sooner or later we must all experience.

Remove one restraint and it becomes easier to remove others. Why not proceed further and remove an unborn fetus between the 26th and 36th weeks of gestation? There is considerable risk that in the future, we may be tempted to bypass the costly burdensome and onerous task of supporting our mentally defective children, the senile parents, and the insane. It can't happen here we will insist. But it can. During World War II a highly civilized nation snuffed out the lives of many humans in the gas chambers. When universal respect for life and the living is lost, we will have entered into the era of decadence.

There is real hope that researchers will find a method of birth control, effective and acceptable by all. Then and only then will the need for abortion be minimized.

Sincerely,

Lucien G. Pascoe

A Thymic Cyst Presenting As Cardiomegaly

PAUL E. SAUER, M.D.
AHMED ELKADI, M.D.
CARL H. ALMOND, M.D.
HUGH LUNDMAN, M.D.
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The preoperative differentiation of a primary mediastinal tumor or cyst from a cardiovascular abnormality may be difficult but is mandatory for a properly planned operation.

MOST CLINICIANS are familiar with the problem of differentiating primary tumors and cysts of the mediastinum from cardiovascular abnormalities. Thymic cysts are unusual and infrequently reported in the world literature. Less frequently, thymic cysts have been reported as cardiomegaly. This communication presents a case of a thymic cyst simulating cardiomegaly, and a review of the world literature.

CASE REPORT

D. C. 12-33-63-71, a 14-year-old Caucasian male was referred to the University of Missouri Medical Center because of cardiac enlargement noted on a recent chest x-ray (Figure 2). His previous chest x-ray (Figure 1) 15 months prior to admission revealed a normal cardiac configuration. There was no history or symptoms of cardiac disease.

As an infant, he had been exposed to a grandfather with tuberculosis and had been followed with yearly chest x-rays and tuberculin skin tests.

His physical examination revealed a well-developed 14-year-old male in no distress. The examination of the lungs, heart, and peripheral pulses did not reveal any abnormalities.

The hemogram, urine analysis, blood sugar, BUN, and ESR were all normal. The electrocardiogram was also normal.

The chest x-ray revealed an unusual configuration of the left cardiac border. Angiocardiography was recommended for definition of the lesion.

Right heart catheterization revealed normal hemodynamics and confirmed the absence of an intracardiac lesion. The preoperative diagnosis was a pericardial cyst.

A left thoracotomy was performed. A thin walled 15 x 9 x 3 cm unilocular cystic structure was identified beneath the mediastinal pleura and phrenic nerve. The cyst covered the left cardiac border, extended anteriorly and superiorly to the base of the heart (Figure 3). The mediastinal pleura was dissected from the cyst which was then easily removed from the pericardium. A short stalk extending into the left supraclavicular area was ligated, and the cyst was removed.

Aspiration of the cyst yielded 450 cc's of brownish clear fluid. Fluid cultures and cytology were negative and class I respectively. Microscopic examination of the cyst wall revealed the presence of thymic tissue and Hassall's corpuscles. The postoperative



Figure 1. Chest x-ray 15 months PTA.

course was uneventful and on the eighth day the patient was discharged to be followed in the clinic (Figure 4).

DISCUSSION

Cystic lesions account for 15 to 21 percent of the primary tumors and cysts of the mediastinum.^{1, 22, 46} Cysts may arise from

the pericardium, bronchi, trachea, esophagus, and thymus gland.^{6, 38}

Human thymic primordia appear toward the end of the sixth embryonic week as ventral sacculations of the third pharyngeal pouches. During the eighth week, the embryonic gland becomes attached to the pericardium and migrates into the mediastinum. Cystic lesions of the thymus gland may be located in any position along a line extending from the angle of the jaw medially to the midline of the neck, and into the mediastinum along the pericardium as far down as the diaphragm.²

The study of thymic tumors is an intriguing experience and any attempt to solve readily the differences of opinions seems almost doomed to failure.⁴¹ Even the lack of unanimity of histologic interpretation of the non-invasive thymic tumors appears insoluble.⁵⁰ Speer⁵⁴ states that there are five sources from which thymic cysts may develop: (1) embryonal remnants of the thymopharyngeal ducts, the bronchial clefts, or the thymic tubules; (2) from sequestration products in pathological involution of the gland; (3) from degenerating Hassall's corpuscles; (4) from lymph vessels, blood vessels, or connective tissue in various stages of thymic development, hyperplasia or involution; and (5) from neoplastic processes



Figure 2. Chest x-ray on admission.



Figure 3. Intraoperative picture of the cyst.

in the lymphoid cyto-reticular or connective tissues.

Krech, Storey, and Umiker³² believe that thymic cysts may be divided into three groups: (1) congenital, (2) inflammatory, and (3) neoplastic. The non-neoplastic, non-inflammatory cysts of the thymus are probably congenital in origin. A congenital defect may have been present in the form of patent thymic or thymopharyngeal duct, persisting until such time as fluid or hemorrhagic distention occurred. Why this happens is not known but is documented by previously normal chest x-rays.

The cysts resulting from infection appear invariably to be due to syphilis.^{14, 15, 37} These cysts were often termed Dubois' abscesses because Dubois¹⁴ in 1850 described the cystic alteration in new born infants dying of congenital syphilis. Cysts occurring in thymic neoplasm can be attributed to degeneration and necrosis of the tumor.³²

In 1897, Loupalt³⁵ recorded the first congenital thymic cyst, an autopsy finding in an 18-year-old girl. As late as 1954, Krech's³² review of the literature revealed only 13 cases and he added four. A careful review of the available world literature up to 1969 yielded 97 thymic cysts.^{1, 3, 4, 5, 7, 9, 10-13, 16-28, 30-36, 38-43, 45-49, 51-59, 61, 62} The use of routine periodic chest x-rays and aggressive surgical approach to cervical and mediastinal lesions in the past 15 years is thought to be largely responsible for the increased number of cysts reported.³⁴

Of the 97 cysts, 27 were cervical, 63 were mediastinal, two were combined cervical-mediastinal, and five were not localized. The cervical cysts were most commonly found in children as a lateral cervical mass.^{16, 49} Prompt surgical intervention was diagnostic.

The mediastinal cysts are reported in patients of less than one year of age to as old as 75 years.^{27, 32} The average age was 35 years. The sex distribution was equal.^{42, 49}

Mediastinal thymic cysts are usually asymptomatic and usually found as an incidental x-ray finding.^{51, 45} The cysts are located in the anterior and superior mediastinum and not infrequently cause marked distortion of the cardiac silhouette.^{10, 47, 57, 61} They are most commonly present on the right border of the heart, but may cover

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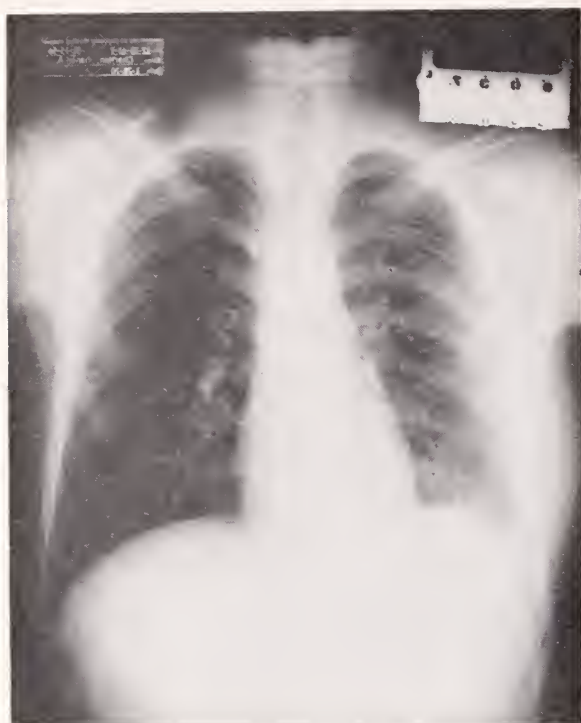


Figure 4. Postoperative chest x-ray.

the left and in some cases may be large enough to cover both borders of the cardiac shadow.⁴⁹ The size of the cysts is variable and may be as large as 18 x 9 x 7 centimeters.⁵ Symptoms, while rare, result from compression of the surrounding structures, *i.e.* heart, vessels, and lungs.^{1, 49}

The preoperative differentiation of a primary mediastinal tumor or cyst from a cardiovascular abnormality may be difficult but is highly desirable in order that a properly planned operation may be anticipated.^{10, 42, 48} The frontal and lateral chest x-rays will usually define the location of the pathology.^{22, 49} Occasionally, additional views as suggested by Videbach⁵⁷ and Sorensen⁵³ may be necessary. Fluoroscopic examination may be misleading because of transmitted pulsations.⁴⁹ Kincaid²⁹ was able to differentiate vascular and nonvascular lesions in only 28 percent of his cases with fluoroscopy. In the more recent reports of thymic cysts, angiography and cardiac catheterization were frequently necessary to establish proper definition of the lesion.^{10, 25, 41, 47, 61, 62} Less frequently used diagnostic modalities include artificial pneumothorax, pneumomediastinum, thoracoscopy and mediastinoscopy.^{53, 61}

Early surgical efforts to resect cervical and mediastinal thymic cysts were unsuccessful.^{40, 43} Hyde, Sellers and Owens²⁶ in 1944 reported the first complete excision of a cervical thymic cyst. In 1947, Bradford, *et al.*,⁷ and Smart⁵² independently reported successfully removing a mediastinal thymic cyst. Since 1947, these cysts have been removed without a fatality being reported in the literature. The cysts may be multilocular or unilocular and contain a pigmented fluid, usually with a brownish tint.^{5, 12, 30} This is in contrast to the pericardial cyst which contains a clear fluid, hence the 'spring water cyst.'⁸ Complete excision of the cyst is curative.⁴⁹ While malignant degeneration of a cyst has not been reported, malignant degeneration of aberrant thymic tissue does occur.^{10, 41, 42, 44, 56}

The association of the thymic cyst and myasthenia gravis has been reported by Fongi, *et al.*,¹⁷ but it is felt to be very unlikely by Heupel.²⁵ The ultimate diagnosis of a thymic cyst can be made only by histologic examination of the cyst wall.

SUMMARY

A case of a thymic cyst simulating cardiomegaly in a 14-year-old asymptomatic boy was reported. The etiology, embryology, and pathology of thymic cysts are discussed, and diagnostic methods for differentiating mediastinal cysts from cardiovascular lesions are mentioned. The available world literature is briefly reviewed. □

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Apparent Transient False-Positive FTA-ABS Test Following Smallpox Vaccination

ON JUNE 23, 1970, a 20-year-old woman from Tulsa, Oklahoma, was given a routine serologic test for syphilis prior to applying for a marriage license. When the test was reported as reactive, a second blood specimen was taken. The second test (VDRL Slide Test) was also reactive at a 1:8 dilution. The following day, June 26, the patient was sent to the Venereal Disease Clinic at the Tulsa City-County Health Department, where the VDRL Slide Test was again reactive at a 1:8 dilution. Furthermore, a Fluorescent Treponemal Antibody-Absorption (FTA-ABS) test performed at the Oklahoma State Department of Health was also reactive.

The patient denied having had sexual intercourse. On physical examination, her hymen was intact, and a cervical culture for gonococci was negative. The patient's fiancé had a nonreactive serologic test for syphilis; his physical examination showed no lesions or other evidence of primary or secondary syphilis. Both the patient and her fiancé denied having had symptoms compatible with venereal disease.

The patient had received a smallpox vaccination a month earlier. Since routine serologic tests for syphilis that use crude lipoidal or purified cardiolipin antigens reportedly give transient false-positive results with some persons who have had recent smallpox vaccinations, a tentative diagnosis of biologic false-positive reaction was made, and no treatment was given.

A follow-up VDRL Slide Test on July 6th was reactive at a 1:2 dilution, but the FTA-ABS test was nonreactive. On October 16th, after the patient was married, both the VDRL Slide and FTA-ABS Tests were nonreactive. The VDRL Slide Test was performed at the Tulsa City-County Health Department and the FTA-ABS test at the Oklahoma State Health Department.

(Reported by Mary Jo Jacobs, M.D., clinical physician; George W. Prothro, M.D., Director, Tulsa City-County Health Department; R. LeRoy Carpenter, M.D., Chief, Personal Health Services, Oklahoma State Department of Health.)

EDITORIAL NOTE:

The incidence of false-positive reactions for syphilis in persons who have been recently vaccinated against smallpox has been reported to be from 6 to 16 percent.^{1,2} The positive results usually occur two weeks after vaccination and last up to four months.^{2,3} In the United States, the FTA-ABS is the test most widely used for serologic confirmation of syphilis, and as far as is known, this is the first report of an apparent transient false-positive reaction of this test in connection with smallpox vaccine. □

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provided by one study of the American Humane Society. More than half of the 662 children involved (all reported in newspapers within a single year) were less than 4 years of age. One fourth of the battered youngsters died; most of these deaths were of children less than 2 years of age. Fathers were more often guilty of child abuse than mothers, but sometimes both parents participated. The study indicated that battered children are not limited to any particular socioeconomic stratum.

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Contraindications — Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings — The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality conducted in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain^{1,2} leading to this conclusion, and one³ in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll¹ was about sevenfold, while Sartwell and associates⁴ in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Ovulen and Demulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions — The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of

them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen or Demulen. Therefore, if such tests are abnormal in a patient taking Ovulen or Demulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen or Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen or Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen or Demulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen or Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives — A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function; increased sulfobromophthalen retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X, thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T₃ uptake values; metyrapone test and pregnanediol determination.

References: 1. Royal College of General Practitioners: Oral Contraception and Thrombo-Embolic Disease, J. Coll. Gen. Pract. 13:267-279 (May) 1967. 2. Inman, W. H. W., and Vessey, M. P.: Investigation of Deaths from Pulmonary, Coronary, and Cerebral Thrombosis and Embolism in Women of Child-Bearing Age, Brit. Med. J. 2:193-199 (April 27) 1968. 3. Vessey, M. P., and Doll, R.: Investigation of Relation Between Use of Oral Contraceptives and Thromboembolic Disease: A Further Report, Brit. Med. J. 2:651-657 (June 14) 1969. 4. Sartwell, P. E.; Masi, A. T.; Arthes, F. G.; Greene, G. R., and Smith, H. E.: Thromboembolism and Oral Contraceptives: An Epidemiologic Case-Control Study, Amer. J. Epidemiol. 90:365-380 (Nov.) 1969.

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Medicine in the American Revolution

PART III

VIRGINIA R. ALLEN

While the military heroes of the Revolutionary War are familiar to all, the medical men of that era are little known though they were leaders of the colonial community. Doctors served both as physicians and military commanders, and six signed the Declaration of Independence.

NO STORY of Revolutionary War medicine is complete without a discussion of the feud which arose between Doctors Morgan, Rush and Shippen. The quarrel is a story of complicated personal relationships. Unfortunately, their animosities greatly affected the lives of others. Many writers have stated or implied the belief that Doctor Shippen was guilty of neglect and malpractice and that Morgan and Rush sought justified vindication for wrongs imposed upon them and the medical department. However, any attempt to produce an objective account of the whole controversy is hampered by a lack of official documents.¹ No pertinent

documents have been found in the Revolutionary Archives. They were probably casualties of the British burning of Washington in 1814. Many of the Morgan-Rush charges against Shippen appear valid, however Shippen was acquitted by a court martial and reinstated in his office. Because of the many unanswered questions and the complexity of the human relationships involved, the story of the quarrel is difficult to construct.

John Morgan, William Shippen and Benjamin Rush were three of the most important names in medicine in colonial America. All were professors at the new school of medicine at the College of Philadelphia and were prominent in colonial affairs—all were young, yet already held in high esteem—all were trained by the finest intellects in medicine at the University of Edinburgh. Their similarity of backgrounds and interests would lead to the expectation that these three would direct efforts toward the betterment of army medical service. Unfortunately for hundreds of soldiers in the Continental Army, this was not the case.

Morgan, one of the best-trained doctors in colonial America, was the son of a Philadelphia merchant. His education included study at a boys' academy (the same one

Shippen attended), a six year apprenticeship under Doctor John Redman, a Liberal Arts degree from the College of Philadelphia and the degree of Medical Doctor from the University of Edinburgh. In addition to his formal education, he was the apothecary for the Pennsylvania Hospital and served for a time as regimental surgeon of the Pennsylvania Provincial Militia fighting in the French and Indian Wars. Doctor Morgan was formally graduated from the University of Edinburgh on July 18, 1763, "with such reputation as few, if any, have ever obtained."² After a tour of Europe where he received more honors, Morgan returned to Philadelphia. He was immediately elected unanimously to the first medical professorship in North America. At the time he applied for the professorship, Morgan also submitted a plan for the medical school and this began the animosity with Doctor Shippen. Nowhere in his plan did he refer to Shippen, who for three consecutive years had delivered a series of medical lectures at the College aimed at promoting medical education. Morgan ignored Shippen's work and presented himself as the originator of the plan to open a medical department at the College.

Doctor Morgan delivered his *Discourse upon the Institution of Medical Schools in America* during commencement exercises at the College, May 30th and 31st, 1765. Although the *Discourse* was presented at the beginning of a promising career, it proved to be its zenith. Unknowingly, Morgan had created the causes for the frustration and failure of many of his aspirations, for he alienated many colonial physicians, especially Shippen, in this indictment of American medical education. In both his relationship with the medical school and the medical department of the army, Doctor Morgan experienced the same conflict between his ideal

and the attainable. He exhibited the same inability to understand the difference between what he knew should be and what in actual practice could be. He was a man who required much of himself and could not understand differing standards of others.

Shippen's background and training closely paralleled Morgan's. He returned from his training in Edinburgh to Philadelphia and began a practice specializing in obstetrics. This was a difficult assignment in the days when it was thought improper for a woman to be attended in childbirth by a male. He originated a course in midwifery and instituted a series of lectures on anatomy at the College. He also announced his interest in the establishment of a medical school at the College. Although their environment had been almost identical, the personalities of Morgan and Shippen were opposites. Morgan was very formal, serious, and dignified and he tended to be jealous of his rights and dignity. Shippen had an easy-going appealing personality, was good company, and made loyal friends.

Doctor Morgan began his directorship of the medical department of the army with an almost insurmountable set of problems. At its beginning the hospital department was faced with the problems of jealousy, inadequate supplies, and a congress which did not recognize its needs. Adding to the confusion was Doctor Church's trial for treason and his imprisonment. While the confusion increased, Morgan delayed a month before reporting for duty.

Doctor Morgan tried to correct the loose discipline and lack of organization, but he was continually frustrated in his efforts by departmental jealousies and the lack of clearly defined authority. Many times the activities of the regimental surgeons were upheld or hidden by their regimental commanders. There was continual dissension over the transfer of sick to the general hospitals and the allocating of supplies. Morgan tried repeatedly to mediate with the dissenting parties. The basic problem was the failure of congress to grant the director general the necessary authority to cope with the problems and to appropriate sufficient money for medical supplies and hospital stores. The conflict with Doctor William

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Stringer over limits of authority was the catalyst finally responsible for their dismissal.

Congress was besieged by complaints from all quarters concerning the plight of the sick of the Continental Army. They came from regimental surgeons, generals, regimental officers and soldiers. Congress became so irritated it felt that a reorganization was an absolute necessity, but this applied also to almost every other division of the army.³ The medical department by comparison was probably about as well managed as other army divisions. In an effort to appease popular demand, congress seemed to forget Morgan's tireless efforts to bring order out of chaos in the hospital department and his attempts to obtain authority and help. Doctor Morgan was dismissed without a hearing or an expression of regret.

The surgeons of the general hospital service prepared a memorial showing their esteem for Morgan, recounting the ways he had improved the medical service and worked for the sick and wounded. Morgan demanded a formal investigation from congress, but it took no action for more than two years. Morgan's promising medical career became a victim of his bitterness and determination to vindicate himself.

Doctor Morgan had felt slighted by congress several times during his term of office, especially regarding his efforts to establish the limits of his authority over Doctor Stringer. He was further affronted when congress appointed Shippen from a subordinate post to directorship of the hospitals west of the Hudson River, instructing him to report directly to congress. Morgan began to feel that Shippen coveted his job. The lines of authority in the medical service had thus been further confused. Appeals to congress by Morgan had been met with indifference. Morgan's resentment and desire for someone to blame became centered around Doctor Shippen.

General Washington wrote congress soon after Morgan's dismissal:

"It is vain however to look back upon past misfortunes. I will not pretend to point out the cause, but I know matters have been strangely conducted in the Medical line. I hope your new appointment, when it is

made, will make the necessary reform in the Hospitals and that I shall not, in the next campaign, have my ears and eyes shocked with the complaints and the looks of the poor creatures perishing for want of proper care, either by the Regimental or Hospital surgeons."⁴

April 11th, 1777, congress chose Shippen to be director general and the hospital department was reorganized according to a plan submitted by him.⁵ The plan called for three geographical subdivisions, each headed by a deputy director general. He faced many of the same problems that had defeated Doctor Morgan, for there was still dissension among the medical men and scarcity of drugs and supplies. The new plan had, however, placed the regimental surgeons and hospitals under the jurisdiction of the director general.

During the winter of 1778-1779, army morale reached a low ebb, including the medical department. Rumors spread concerning misuse of funds and supplies and unfair practices by Shippen. He seemed inclined to spend too much time at his headquarters rather than at the hospitals. Damaging insinuations and charges were made by Rush and Morgan.

Benjamin Rush is better known than Shippen or Morgan because he was a prolific writer. His writings are a major source of primary information concerning the medical department of the Continental Army. Rush's training and background were similar to that of Morgan and Shippen, and he, also, was a professor of the Philadelphia medical school. Rush frequently changed his opinions, yet at other times clung tenaciously to ideas even though they were proved beyond reasonable doubt to be wrong. He seemed to have an extraordinary ability for arriving at correct conclusions for the wrong reasons.⁶ John Adams' diary of 1775 reveals this evaluation of Rush: "Rush, I think is too much of a talker to be a deep thinker—elegant, but not great."⁷

Rush was the first deputy director of the new Middle Department, created in Shippen's reorganization plan. Rush had a history of fault finding and opponents usually became objects of his relentless pursuit. During the summer of 1777, he began find-

ing fault with the administration of the medical department, and in fact, the whole Continental Army. He needed someone to blame, and Shippen, along with General Washington, gradually became his culprits. In addition to agitating against Shippen, he was also involved in a movement to discredit and replace Washington. He began to collect letters which were not originally intended to be indictments against Shippen, but merely statements of existing conditions and requests for aid. Facts, taken out of context, can be presented with a different interpretation. Rush claimed that Shippen was seldom seen at the hospitals, however, Shippen had tremendous administrative responsibilities. Doctor Morgan claimed to have personally dressed the wounds of every casualty of the Battle of Long Island.⁸ This sounds praiseworthy at first glance, but perhaps it could have been done by subordinates, while he gave leadership and administered the whole organization. Some of Rush's claims against Shippen involved mismanagement of supplies and drugs. It was however, a common practice to exaggerate needs when requesting new supplies, while expecting to receive a smaller amount.⁹

Morgan's efforts to vindicate his directorship gradually became an obsessed attempt to place the blame for his dismissal on Shippen. Morgan and Rush joined forces in a campaign to oust Shippen. Many charges against Shippen were not within his power to correct. One complaint was the lack of a guard for the sick, which was not within the jurisdiction of the medical department.

In March, 1780, Doctor Shippen was arrested and charged with malpractice and misconduct. His court-martial, which lasted three months, ended with his acquittal. He was reappointed director general, but served only three months before resigning.

On June 12th, 1779, congress had formally cleared Morgan of misconduct as director general. The congressional report stated:

"The said Director General did conduct himself ably and faithfully in the discharge of the duties of his office; Therefore,

"Resolved, That Congress are satisfied with the conduct of Doctor John Morgan,

while acting Director General and Physician-in-Chief in the General Hospitals of the United States, and that this resolution be published."¹⁰

He could not however rid himself of his obsession with Doctor Shippen's responsibility for his dismissal and remained determined to discredit him. For more than five years, he spent a major part of his efforts to win vindication and pursue the discrediting of Shippen.¹¹ Morgan and Rush went through the country seeking documentation of Shippen's guilt. Morgan never recovered from this experience and the professional potential he exhibited as a young man was not realized.

Without the documents of the court-martial, Shippen's guilt or innocence remains subject to question. The investigation and the evidence brought to the trial did dramatically illustrate the weaknesses and abuses possible under the existing organization and resulted in a final reorganization. The professional quarrel of these three had tragic effects on the careers of Shippen and Morgan and on the lives of many soldiers of the Continental Army.

Like all armed conflicts between nations, the Revolutionary War also damaged the institutions dedicated to the development of science. Two medical schools were established in the colonies just prior to the war. The first was at the College of Philadelphia in 1765, and the second at Kings College, New York, in 1767. The war temporarily halted the medical department at Kings College. Cities, which were the sites of most attempts at scientific advancement, were more damaged than the countryside by the fighting. The major cities were all occupied for a time by the British, and in some cities, they burned libraries.

Efforts were made to keep scientific communication open with Europe. Benjamin Franklin in Paris served as a link between science in America and England. Once, the Spanish ambassador acted as a courier carrying letters on science to Franklin from England.¹²

The disruption of a regular supply of European books was a severe penalty of the war, and as a result the country was eight years behind in everything. Books were re-

printed here, but it was difficult to catch up and some losses were almost irreparable.

Many physicians felt divided loyalties at the beginning of the war. A number of qualified physicians, feeling stronger ties with England, remained Loyalists and eventually returned to England. Valuable friends and patrons of medicine were lost during the war through the deaths of Doctor John Fothergill, Doctor William Hunter, and Doctor Daniel Solander. Later, they were replaced with new ties, but because of the lapse of contact, they were never quite the same. Time was needed to repair the injured relationships between American physicians and European institutions.

Laws for licensing doctors had just begun to be passed at the time of the war and further legislation was delayed. However, the war brought together doctors from different states and demonstrated the need to examine the candidates for medical service. Doctors were exposed to examining procedures and were encouraged to urge licensing legislation after the war. Between 1780 and 1810 most of the states responded with some type of licensing procedure.

Although the war was restrictive, it did provide doctors with a type of clinical facility and limited opportunity for medical experimentation. Many physicians, who would never have had the opportunity, were able to observe the techniques of British, French and Hessian surgeons. The war enabled a large number of physicians to broaden their knowledge through travel and contact with other physicians. An increase in state medical societies followed the war, accompanied by an improvement in medical practice throughout the country.¹³

Doctors remained prominent figures in affairs after the war. Three doctors served as Secretary of War between the Revolutionary War and the War of 1812: James McHenry, 1796-1800; Henry Dearborn, 1801-1809; William Eustis, 1809-1813. The Revolution stimulated thinking and writing in the field of medicine. Doctor John Jones of New York wrote a volume on the treatment of wounds and fractures; Doctor William Brown, a pharmacopoeia; Morgan and Rush, on smallpox. Other writings were: *Economic Observations on Military Hospit-*

als by Doctor James Tilton; *The Remarkable Case of a Gunshot Wound* (remarkable because the patient recovered) by Doctor Barnabas Binney; and *Directions for Preserving the Health of Soldiers*, by Benjamin Rush.¹⁴

Great expectations for the betterment of the nation in general followed the war. Physicians such as Rush, David Ramsey, and John Warren expected medicine to prosper under the influence of American freedom and independence.¹⁵ □

SIGNIFICANT MEDICAL EVENTS DURING THE ERA OF THE AMERICAN REVOLUTION, 1750-1800

- 1750 John Bard and Peter Middleton present systematic dissection for the purpose of instruction, in New York.
- 1751 The Pennsylvania Hospital, the first general hospital in colonial America, opened in Philadelphia.
- 1762 William Shippen, Jr., began his anatomical lectures in Philadelphia with demonstration on a cadaver.
- 1765 John Morgan and William Shippen, Jr., founded medical department of the College of Philadelphia. Shippen presented first lectures on obstetrics.
- 1766 New Jersey Medical Society, first state medical society in America, established.
- 1767 Medical School at King's College, New York City, (now Columbia University) organized.
- 1773 First insane asylum in America opened at Williamsburg, Virginia.
- 1775 Hospital Department of the Continental Army established.
- 1782 Harvard Medical School founded.
- 1784 Benjamin Franklin invents bifocals.
- 1787 College of Physicians of Philadelphia founded.
- 1798 Medical department of Dartmouth College founded.
- 1800 Benjamin Waterhouse introduced vaccination in America.

FOOTNOTES

1. Almost every history of Revolutionary medicine gives an account of this feud. I found James E. Gibson's treatment of the quarrel to be the most objective. Doctor Bodo Otto and the Medical Background of the American Revolution (Springfield, Illinois: Charles C. Thomas, 1937).
2. Whitfield J. Bell, Jr.: John Morgan Continental Doctor (Philadelphia: University of Philadelphia Press, 1965), p. 75.
3. Gibson, p. 122.
4. Gibson, p. 201.
5. Virginia Allen: "Medicine in the American Revolution, Part I," Journal of the OMA, September, 1970, p. 428.
6. For example, Rush decided the way to eliminate the threat of yellow fever in Philadelphia was to drain the surrounding marshes, but his reason was that they emitted a disease producing miasma.
7. Gibson, p. 191.
8. Gibson, p. 205.
9. Gibson, p. 206.
10. Francis R. Packard: History of Medicine in the United States, Vol. I (New York: Hafner Publishing Co., 1963), p. 558.
11. Bell, p. 240.
12. Brooke Hindle: The Pursuit of Science in Revolutionary America (Chapel Hill: University of North Carolina Press, 1956), p. 221.
13. Wyndham B. Blanton: Medicine in Virginia in the Eighteenth Century (Richmond: Garrett & Massie, Incorporated, 1931), p. 268.
14. The Directions were first published in pamphlet form in 1778, again in 1808, twice during the Civil War, and a fifth time in The Military Surgeon in 1908.
15. Hindle, p. 280.

6520 North Missouri, Oklahoma City, Oklahoma 73111

"As They Were Graduated"

With a nation reaching, octopus-like, for a vaguely defined and alledgely imperative revision of our "Health Care Delivery System," a single, common truth is being discovered: More physicians must be available to meet the increasing needs of our society. Fortunately, but by no means accidentally, this Fall the largest number of medical students in this nation's history will begin its first year of medical education. Three or

four years from now, how will these students view their roles as new physicians? What will they hear and say when they are graduated? Will we be strangers to them? Or colleagues? On June 6th, 1971, the members of the senior class of the University of Oklahoma held their commencement exercise. Here is what they heard and said. It behooves us to listen.

Commencement Address

Oklahoma University School of Medicine

June 6, 1971

CHARLES A. LeMAISTRE, M.D.

Provost Riggs, Dean Bird, Distinguished Faculty, our newest physicians and justly proud parents, wives, sweethearts and friends:

Of all of the honors and benefits accruing to the academic life, the privilege of delivering a commencement address remains one of those most cherished and one which carries with it, in my opinion, a rather awesome responsibility. The speaker is addressing a group which, after close association for a number of years, is about to disperse to all parts of the nation. In this their last class together, their last lecture in common—the eve of a new set of professional experiences—what is it that is appropriate to convey to them? What subject is so impersonal and yet so individualized, that this group's last few moments together as a class should be devoted to its consideration? It is this challenge which makes the commence-

ment address a serious responsibility for those who are inclined to accept.

I considered several thoughts and themes. Some of the rejects included:

—A discussion of the debt which all students owe to their devoted and distinguished faculty. I then remembered that in very recent times The University of Texas System medical components had successfully raided this fine campus for several faculty members, and I thought better of awakening the memories of such escapades.

—I considered the old theme about 'not whether you win or lose, but how you play the game.' However, in view of certain longstanding and well-recognized athletic confrontations between Texas and Oklahoma, I realized that the credibility of that motto was open to serious question.

—I considered telling the inside story of the life and times of your Dean, my tutor and my good friend Bob Bird. Then I realized that on the basis of our long personal friendship, he might, at some time be tempted to return the favor—and there was really no reason to expose either of us to that type of publicity.

Seriously, however, I must admit to you a double pleasure in being with you today. As was mentioned earlier, I was a physician long before I became an academic administrator, and I would be less than candid with you if I did not readily admit that I sincerely and honestly miss the questioning attitude of medical students, the personal care of patients and the informal communication with fellow physicians over a cup of coffee. The medical school faculty who are here tonight have not left behind these professional pleasures, and I envy them.

My second reason for expressing pleasure at your invitation is that as one who has rather formally removed himself from the main currents of medical care and practice, I can perhaps with some degree of objectivity, step back to assess the present health care situation and make some comments that cannot immediately be challenged as being either provider or consumer biased—at least not until I relinquish the microphone.

What I am concerned about, and what I would like to discuss with you for a few minutes is the broader responsibility of a physician—or perhaps expressed more appropriately—the result of your broader responsibility. The great historian Will Durant once wrote, “The health of a nation is more important than the wealth of a nation.” I would submit to you that the health of this nation is somewhat *more than the sum total of all the healing efforts* of the physicians in practice today and it seems safe to predict that doubling the number of physicians in the present pattern will not alone alter the implications of this statement. Another way of stating the problem is that there is no way that the health of this great nation can be adequately managed within the limits of what has become known as the “traditional practice of medicine.” In this commencement program tonight, our honored physician graduates will take the Oath of Hippocrates.

My theme tonight also comes from Hippocrates who said: “Healing is a matter of time, but it is also a matter of opportunity.” Obviously, a physician can’t heal if the illness is unknown to him. Our present health care pattern does not assure the physician that he will know when someone needs his

services and certainly does not provide the opportunity often to prevent disease.

I submit to you graduates here tonight that you will have the opportunity to minister to a nation’s health, and that the leadership for the development of tomorrow’s viable health care system must come from you. The matter of leadership in health care is the one which is so general yet so individualized that it is worthy of your consideration at your last formal class meeting. Over the last few decades the leadership in health education of this great institution under Doctor James Dennis was a source of pride to all. Where better should the new physician leadership arise than in the graduates of this school.

Following a review of the public press, as well as government reports, foundation studies, and professional journal materials, I am convinced that health planning throughout most of the nation is nothing short of chaotic. A plethora of agencies, boards and commissions are involved at the local, state, and national levels. Each with its own vested interest but none relating to the other in meaningful fashion. Cliches are the most frequent product of these efforts, along with too much eloquent expression of bureaucratic nonsense.

At the same time, health has taken on a new meaning in today’s society and the disparity between expectations and actual availability of health services has never been greater.

There is no doubt that the health care system, especially the mechanisms for health care services, is going to change, and change rapidly. The only question that really remains is how the health care system will change, and who will provide the leadership to insure that these changes preserve those essential freedoms which have been the hallmark of American medicine.

At the same time that we raise the question of leadership, it is fully appropriate to ask “Leadership for what?” a “Leadership to what end?” As I indicated earlier, there is no lack of studies and commission reports which indicate the present deficiencies in our health care system.

In recent months the Carnegie Commis-

Address / LeMAISTRE

sion's highly regarded study entitled *Higher Education and the Nation's Health* has identified what it considers to be the four most vital components of better health care. These are:

- More and better manpower
- More and better health care facilities
- Better financing arrangements for the health care of the population, and
- Better planning for health manpower and health care delivery.

Continuing to evidence the mounting public concern over the health care problem, President Nixon, on February 18th, 1971, delivered his health message to the congress. It described a "new national health strategy that will marshal a variety of forces in a coordinated assault on a variety of problems."

The new strategy would be built on four basic principles:

1. Assuring Equal Access
2. Balancing Supply and Demand
3. Organizing for Efficiency
4. Building on Strengths.

It does not take a great deal of critical analysis to see that Mr. Nixon and the Carnegie Commission are, although in different terminology, citing the major weaknesses in the health care system that we, as both providers and consumers, have long recognized.

Not to be upstaged by either the executive branch in Washington, or the Carnegie Commission in New York, let me discuss with you the five elements—not four which seems to be the popular number—that I consider to be most significant, as changes in the health care system are advocated and advanced. I will call these five elements, quite simply: Manpower, accessibility, quality, continuity, and efficiency. I raised the question earlier about "leadership for what?" In my humble opinion, it is leadership to improve the health care system in these five areas. I would like to present to you a few thoughts about each of these elements.

Without exception, students of the contemporary health scene agree that an increased supply of health manpower is es-

sential to the resolution of whatever other problems there may be in our system of health care delivery.

- Without manpower, the *facilities* would be unused
- Without manpower, improved *financing* arrangements would be useless, and
- Without manpower, the problems of the health system related to distribution, to utilization and to access will remain academic.

The manpower shortage that has not been fully taken into account is allied health manpower. In a very real sense, our ability to provide additional health manpower appropriate to our health needs will be the hallmark of our ability to improve our health care system.

In spite of statistics demonstrating the great need for paramedical manpower, and the increasing financial support being directed to its development, there remains a basic weakness in the existing programs.

The basic question is whether the manpower produced will be appropriate to the health needs of tomorrow. Who is, or should be, responsible for ensuring this appropriateness?

Who better than the physician can define the training requirements for those expected to assist him in making health services more convenient and available?

Who better than the physician can define those personnel innovations in the health care system which will preserve the high quality of medical care but make it available more efficiently at lower cost?

Who better than organized medicine, can act as the collective voice of physicians in delineating personnel planning for the future?

I submit that you must provide the reasonable, realistic, and decisive leadership if future allied health manpower is to yield better health services.

The second basic element of an effective health care system which I commend to you is ACCESSIBILITY.

As the provision of health services becomes increasingly specialized, individuals in need of these services are faced with increasingly difficult choices as to precisely where, how, and from whom to seek care.

The resulting confusion often leads to unnecessary delay in obtaining care, to self-diagnosis, and treatment, or to self-referral to inappropriate sources of care. This confusion prevails in all segments of society, even the wealthy and well educated.

There is no doubt that the physician, with his intimate knowledge of the several components of the health care system is best suited to develop and define the appropriate "points of entry" into this system which has become so complex and burdensome.

Following manpower and accessibility the third essential element for good health care is **QUALITY**. Medical care of high quality implements the most up-to-date knowledge and techniques available from the health sciences. As a basis for achieving this high quality care, two factors must be present: first, professional competence and second, patient acceptability.

Professional competence, in its broadest sense, has many dimensions and forms the cornerstone of American medicine. The competent practitioner of today is a product of the best available professional education and training, and his practice reflects constant adherence to professionally-defined performance standards. Yet, if the patient is not aware of, or does not personally accept, these high standards, quality cannot be achieved. It's much like good teaching without learning—largely wasted effort.

The patient's cooperation in and acceptance of the medical care process is the key-stone of good medical care. He cannot cooperate effectively if he is given no opportunity or incentive to understand the process or what it expects of him. Insufficient efforts have been made to increase his understanding, clarify his expectations, and enhance his cooperation so that he will accept high quality medical care.

If the medical profession does not take an immediate and direct leadership role to ensure both the quality of the service which it provides and the education of the patient to accept nothing less than first quality, that leadership will go, by default, to those less competent but more willing to concern themselves with defining "quality."

If the manpower is available and health services must be both accessible and of high

quality, then I would propose to you that a fourth element is **CONTINUITY**.

Continuity for the individual involves both a concern for him as a human being in the context of his family and community life, and an orientation toward promoting and maintaining his total health at every opportunity.

With continuity in the delivery of services, the patient is not fragmented, responsibility for his care is shared but is not partitioned, and the delivery of needed services is not disrupted or overlooked.

It is perhaps in the element of continuity where our current health care system is most lacking. Unquestionably, we have developed a magnificent system for the care of the episodic illness—yet, in the areas of preventive medical care and progressive patient care we have not achieved that degree of effectiveness and efficiency shown by some countries with per capita health expenditures considerably less than our own.

The continued leadership of professional medicine is essential as programs to ensure the continuity of health care services are designed, implemented, and assessed.

Following manpower, accessibility, quality, and continuity as essential elements in the health care system, I must close my listing with **EFFICIENCY**.

It appears to me that there are several elements within this criteria of efficiency which merit a brief comment.

First, the consumer should have available to him a payment mechanism which ensures him dignified access to the health care system. The consumer will not tolerate levels

Charles A. LeMaistre, M.D., Chancellor of the University of Texas System, received his medical degree from Cornell University Medical College in 1947. Before moving to Texas, Doctor LeMaistre was an Instructor and Professor of Medicine at the Cornell Medical College and Chairman of the Department of Preventive Medicine and Community Health at the Emory University School of Medicine. Formerly president of the Southern Thoracic Society and Vice-President of the American Thoracic Society, he holds membership in numerous scientific and medical associations.

Address / LeMAISTRE

of medical care based solely on ability to pay.

Secondly, physicians as providers of services must be assured that their patient-relationships will be preserved, that they remain free to direct their patients' care within broadly defined limits, and that they are judged only by their peers.

Thirdly, both consumers and providers must agree to use health resources, both manpower and facilities, based solely on the individual need of the patient. In like manner, specialized equipment, services, and facilities must be regarded as "community or area" resources and not low utilization resources established for the convenience of a segment of the medical staff. Unnecessary duplication of services is a cost factor which efficiency cannot endure.

Fourthly, it is obvious that the ever-increasing needs for health care services dictate that the techniques for delivering these services will change. The individual physician will undoubtedly direct a group of paramedical personnel in the care of more patients than he could possibly see as an individual. Laboratory procedures will be automated, medical histories will be computerized, and diagnostic differentials will be processed electronically.

Yes, efficiency must be a part of our health care system. Even the richest and most affluent nation in the world could not afford or justify any alternative.

CONCLUSION

Ladies and Gentlemen, I have attempted to discuss with you tonight those elements which I believe will have to be addressed if we are to respond to the needs for improved health care with which we have been challenged. I have attempted to emphasize that the delivery of appropriate, dignified, tender, and compassionate health care—and I have no doubt that this is the realistic goal of each physician in this audience—requires manpower, accessibility, quality, continuity, and efficiency.

Unfortunately, our uniform agreement on these elements will not bring them into existence. And at this point I want to bring

to you the real theme of this address, a theme which I feel will have the complete endorsement of all of you and which I hope will fulfill my responsibility in accepting the assignment of this commencement address.

Not since the famous Flexner Report on medical education at the turn of the century has there been more genuine public and governmental concern over the condition of the health care system in the United States. The general public is wary, the federal establishment is suspicious, the public press is questioning, and the health professionals are uncertain and indecisive. I can think of no service more central to the life of every American which suffers more from a lack of recognized, reasonable, realistic, and decisive leadership.

I say to you graduates as a fellow physician that the opportunity for leadership is as real as it is apparent. There is no question that you here tonight, and the thousands of other physicians in this nation have the ability, the knowledge, and the dedication to develop the leadership which will design the health care system of the future.

To those who doubt this, I would make only two points. The first is that if you do not furnish the leadership and the dedication, others less qualified will, and I fear the consequences. Remember that the Flexner Report was written not by a physician but by an educator, and we cannot hope to be so well-served again. The second is that if you fear the problem is too vast, and that your dedication may be ineffective, I remind you that in 1902 communism was confined to a rented room in Brussels and a handful of *dedicated* adherents. Their dedication to that concept brought communism to the position where that ideology now controls one-half of the world's population and nearly two-thirds of the earth's surface.

If dedication can perform so well for a cause such as communism, I submit to you that there is enough leadership and dedication sitting in this graduating class to make a meaningful contribution toward an improved health care system and in so doing, restore to the medical profession the dignity, respect, and honor which it so richly deserves. □

Charge

LEONARD P. ELIEL, M.D.

"Poor, careworn survivors of a hard struggle, so 'lean and pale and leaden-eyed with study' . . ." So went Sir William Osler's tongue-in-cheek salutation to a graduating class of medical students at the University of Pennsylvania over 80 years ago—but his subsequent charge to this class is just as timely today as it was then: to be *impe- turbable* and to have *equanimity*. *Imper-*

Leonard P. Eliel, M.D., was graduated, cum laude, from Harvard Medical School in 1940. He joined the staff of the Oklahoma Medical Research Foundation in 1951 where he became Vice-President and Director of Research. He is presently Executive Vice-President for Medical Center Affairs and Director of the University of Oklahoma Medical Center.

turbability, he said, "means coolness and presence of mind under all circumstances, calmness mid storm, and clearness of judgment in moments of grave peril." How appropos to our day's troubled world!

Equanimity, he said, is to remain unruffled amongst the uncertainties of our science and art, and to keep your hearts amongst the trials and temptations of large and successful practice lest you give away the gentler influences which make life worth living.

"Gentlemen—farewell," he said, "and take with you into the struggle the watchword *aequanimitas*." To this word of farewell I add only three: pride, gratitude and expectations. Our *pride* in your many accomplishments, our *gratitude* for the education and rich rewards you have given us during your four years here and above all our *expectations* that you will continue to grow in knowledge, wisdom, skill, humility, compassion and love for your patients and colleagues alike, and finally in dedication to a life of service. □

Response

CHARLES F. BETHEA, JR., M.D.

We the Class of 1971 have quietly but firmly stepped forward to accept a stern commission, to be a physician. But today as never before, that commission weighs heavier because, first, the national sense of social urgency and, second, the unbridled growth of an immense technology. And we find ourselves thrust in the vanguard of an American social revolution.

What are our credentials for this change?

We are the progeny of change; for us, progress is traditional. We were first the great post-war baby boom—the infant children of the conquerors of Fascism. The next decade, the 50's, we crowded the grade schools of the country; young children who witnessed the creation of the greatest wealth produc-

Charles F. Bethea, Jr., M.D., served as president of the 1971 graduating class from the University of Oklahoma School of Medicine. He is presently in the internal medicine program at Duke University Medical Center, Durham, North Carolina.

Response / BETHEA

ing society in the history of the world. In the 60's we smacked gum, did the peppermint twist and worshipped the Beatles, oblivious teenagers; while you doubled the world's knowledge and swept to the moon. Three decades of progress speak loudly for a "Silent Generation."

Yes, the legacy of change is ours and now we are here, at last, to assume responsibility. Like the youthful Alexander the Great we might have wept in fear that we would not grow up in time—not before the old man had conquered the entire known world and left *us* nothing to do. But there is more to be known; there are things left undone. And so we begin the task. We have participated in the fundamental reorganization of our medical school; we have benefited from the foresight of its leaders; we have learned some of the wisdom of its teachers—and we

have cause for enthusiasm because before us lies our world to conquer—the task of social justice. It is our own special problem, then, to create a more efficient and more inclusive health care system; but at the same time create a typically American system—one that totally respects the integrity of the individual. The task of social justice; we as the individual practitioner will hold the balance of this justice in our hands. A grave responsibility.

Will we succeed? Some would say "mighty brave words for mighty green troops"—both are true—but the time has long passed when we would get green around the gills at the sight of blood. You see we have what we have learned and we have earned this commission. We have our optimism and we have our ideal. With these we shall move, hesitantly at first and then more boldly. Will we succeed? If we uphold your traditions—we will indeed — — succeed. □

THE OKLAHOMA CITY CLINICAL SOCIETY 41st Annual Fall Conference

October 11th, 12th, 13th, 1971

Skirvin Hotel

Oklahoma City

DISTINGUISHED GUEST SPEAKERS

OTOLARYNGOLOGY

BYRON J. BAILEY, M.D.
Galveston, Texas

ANESTHESIOLOGY

CARTER M. BALLINGER, M.D.
Salt Lake City, Utah

AMERICAN NATIONAL RED CROSS

ALLAN S. CHRISMAN, M.D.
Washington, D.C.

UROLOGY

ABRAHAM T. K. COCKETT, M.D.
Rochester, N.Y.

PEDIATRICS

HEINZ F. EICHENWALD, M.D.
Dallas, Texas

SURGERY

ALBERT W. HARTMAN, M.D.
San Antonio, Texas

DERMATOLOGY

EDMUND D. LOWNY, M.D.
Columbus, Ohio

MEDICINE

MARVIN TURCK, M.D.
Seattle, Washington

PSYCHIATRY

EDWARD A. TYLER, M.D.
Indianapolis, Indiana

OBSTETRICS-GYNECOLOGY

J. PAUL SHIVELY, M.D.
San Francisco, California

LUNCHEONS

Monday — "Underwater Travelogue — Hawaii, Costa Brava and Catalina"

Mrs. Abraham Cockett

Rochester, N.Y. (Wife of Dr. Abraham Cockett)

Tuesday — Medical and Surgical

Luncheons — Roundtable Discussion

Wednesday — "Abortion and Its Impact on Our Society"

Edward A. Tyler, M.D.
Indianapolis, Indiana

O.U. MEDICAL CENTER

Wednesday Morning
"What's New and What's
Useable of What's New"

Symposium:

Gastroenterology

James Hartsuck, M.D.
J. William Hood, M.D.
David Jenkins, M.D.
J. Rainer Poley, M.D.
John Thompson, M.D.
Jack D. Welsh, M.D.

WEDNESDAY AFTERNOON

SYMPOSIUM:

"Sex Education for Physicians"

Edward A. Tyler, M.D.

L	WHAT	• Outstanding Scientific Program
O	\$25.00	• Three Luncheons
O	WILL	• Technical Exhibits
K	BUY	• Oyster Cocktail and Keg Party

**RECOMMENDATION OF THE PUBLIC
HEALTH SERVICE ADVISORY COMMITTEE
ON IMMUNIZATION PRACTICES**

INFLUENZA VACCINE

INTRODUCTION

The effectiveness of the inactivated influenza vaccines is variable and their protection relatively brief. However, they are the only available preventives for influenza and should be given to the chronically ill and the elderly.

INFLUENZA VIRUS VACCINES

For 1971-72, vaccine composition will remain the same as the bivalent 1970-71 vaccine (400 CCA units of type A2 antigen and 300 CCA units of type B antigen). Highly purified vaccines should also be available. These vaccines contain less non-viral protein and should be used whenever possible in patients with histories of severe local or systemic reactions to influenza vaccines.

VACCINE USAGE

Annual vaccination is recommended for persons who have chronic debilitating conditions: 1) Congenital and rheumatic heart disease, especially mitral stenosis; 2) Cardiovascular disorders with evidence of cardiac



**News From
The Oklahoma State
Department of
Health**

insufficiency; 3) Chronic bronchopulmonary diseases, such as asthma, chronic bronchitis, cystic fibrosis, bronchiectasis, emphysema, and advanced tuberculosis; 4) diabetes mellitus and other chronic metabolic disorders.

SCHEDULE

The primary series consists of two doses given subcutaneously six to eight weeks apart (dose volume and schedule details are specified in the manufacturers labeling). Persons who have had vaccine containing the Hong Kong antigen since 1968-69 need only a subcutaneous bivalent booster. Vaccination should be completed by mid-November.

PRECAUTIONS

Influenza vaccine should not be administered to persons clearly hypersensitive to egg protein, ingested or injected. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR JULY, 1971

Disease	July, 1971	July, 1970	June, 1971	Total to Date	
				1971	1970
Amebiasis	4	8	3	38	37
Brucellosis	—	2	—	3	3
Chickenpox	5	12	27	184	2409
Encephalitis, infect.	6	4	2	16	12
Gonorrhea*	575	562	775	4158	3496
Hepatitis, infect. and serum	89	12	43	430	246
Leptospirosis	—	—	—	1	—
Malaria	4	12	9	61	64
Meningococcal infections	1	5	—	5	18
Meningitis, aseptic	57	6	—	67	19
Mumps	5	11	14	190	2131
Rabies in animals	6	11	18	236	67
Rheumatic fever	2	—	3	17	4
Rocky Mt. spotted fever	11	2	6	23	12
Rubella	8	15	9	60	807
Rubella, congenital syn.	—	—	—	—	—
Rubeola	10	26	17	787	436
Salmonellosis	38	12	15	115	87
Shigellosis	4	3	1	40	48
Syphilis*	69	89	112	740	873
Tetanus	1	—	—	1	—
Tuberculosis, new active	30	45	35	197	212
Tularemia	7	—	2	12	7
Typhoid fever	—	—	—	2	—
Whooping cough	8	8	1	16	22

*Use Form ODH-231

New Foundation Grants Rural Scholarships

Three OU Medical Students have been granted \$5,000 scholarships by the Oklahoma Foundation for Community Medical Care, Inc.. In return for their \$5,000, each student has pledged he will practice in a rural community for at least one year.

The students will be eligible for additional scholarships each year until their medical training is complete. For each scholarship they are granted, they must pledge to practice in a rural community for an additional year.

The new foundation was created at the direction of the OSMA House of Delegates and is an outgrowth of the association's Council on Rural Medical Care. This council was originally formed to study possible methods of increasing the number of physicians serving in rural communities.

The scholarships in turn for practice in rural communities for this year went to first-year student Max Brazil of Sentinel, Oklahoma; John Goff, a second-year student from Muskogee; and J. Randall Raul, a third-year student from Alva.

Brazil is 21 years old and took his undergraduate work at Oklahoma State University where he was a member of Alpha Epsilon Delta International Premedical Honor Society. He was listed on both the President's and Dean's Honor Roll at CSU and was a member of Phi Eta Sigma Honor Society. His parents, Mr. and Mrs. E. E. Brazil operate a farm in Sentinel.

John Goff is the son of Mr. and Mrs. Frank Goff from Muskogee. He is 22 years old and completed his undergraduate work at Northeastern State College and graduated from high school at Muskogee Central. He

was a member of Alpha Chi Honor Society.

The son of Mr. and Mrs. John Raul of Alva, J. Randall Raul, is 24 years old and married. He completed his undergraduate work at Northwestern State College in Alva and is a graduate of the Alva High School. His father is a bonded cattle buyer.

Each of the three students have entered into a contract with the new Foundation for Community Medical Care and pledge that in return for their \$5,000 scholarship they will practice medicine for a minimum of one year at a rural Oklahoma community. Upon completion of their medical education they will be given a list of such communities by the foundation and will be allowed to choose from the list which community they will serve.

Any of the students receiving a scholarship grant may choose to complete their residency training and military service before undertaking their practice years in a rural community. However, this is not necessary and they may assume their practice as soon as they receive a license after completing their internship.

The Board of Directors of the new foundation is made up equally of M.D. members of the OSMA and lay leaders. The M.D. membership consists of three immediate past presidents of the OSMA, Scott Hendren, M.D., Hillard E. Denyer, M.D. and Ed Calhoun, M.D.; the current President Lucien M. Pascucci, M.D.; and the President-Elect, Stanley R. McCampbell, M.D.

The lay members of the Board of Directors are as follows: William Wise, with the Life Insurance Company of America in Idabel; Guy

Swadley, Jr., Eufaula; Lloyd R. Barby, rancher, Beaver; Archibald C. Edwards, investments, Oklahoma City; and J. M. Rector, III, First National Bank, El Reno.

Doctor Ed Calhoun and Mr. J. M. Rector will serve as President and Vice-President of the new foundation. OSMA Associate Executive Director, David Bickham, will be the foundation's Secretary-Treasurer.

Before voting the three scholarship grants the Board interviewed seven prospects brought to it by David Mock, M.D., Dean of Student Affairs for the OU Medical Center. Doctor Mock serves as the foundation's liaison with the medical school and the student body.

The foundation will be partially supported by a contribution from the OSMA. Five dollars out of each association member's dues goes into the association's Scholarship and Loan Fund. At the direction of the House of Delegates this money will now be transferred to the foundation for disbursement to medical students who have expressed a willingness to practice in rural communities in return for scholarship-grants. The foundation will also solicit funds directly from other sources. However, the first four scholarship-grants were financed completely by the medical association.

The first grant was given last year to a fourth year medical student, David Walsh. Doctor Walsh is currently serving his internship in an Oklahoma City hospital and has not yet confirmed his future plans. □

CORRECTION

The two tranquilizers known as Librium and Valium were incorrectly listed as controlled dangerous substances in the August issue of the Journal. These two items have been removed from the dangerous substances list by order of the United States Court of Appeals for the Third Circuit.

It is not necessary to use a BNDD registration number when prescribing either of these items.

Amphetamine Prescription Limits Urged by Pascucci

An almost total ban on the prescribing of amphetamines and methamphetamines has been called for by Lucien M. Pascucci, M.D., President of the OSMA. The prescription limit request was made as a direct response to President Nixon's call for leadership among the nation's physicians to stem the mounting problem of drug abuse.

In a letter to the OSMA membership Doctor Pascucci said, "I am asking each of our 2300 members to put into effect an almost total ban on the prescribing of amphetamines and methamphetamines with the exception of the clearly recognized conditions where these drugs are indicated. They include cases of narcolepsy and selected cases of hyperactive and brain damaged children."

He went on to urge that every physician survey his entire prescribing practice to insure that all prescriptions for drugs with an abuse

pendency."

President Nixon's challenge to the medical profession came during his address to the AMA's House of Delegates meeting in Atlantic City. At that time he pointed out that massive quantities of amphetamines and methamphetamines are being produced and then diverted into illicit drug traffic. In 1970 drug manufacturers in the United States produced 3,400,000,000 ten milligram dosage units of amphetamines. This represents 16 dosage units for every man, woman and child in the country.

The voluntary limitation of amphetamine and methamphetamine prescriptions is a nationwide movement. The Harris County, Texas, Medical Society started such a program in July of this year. By August 1st a survey showed that there had been a 45 percent reduction in amphetamine prescriptions in Houston. Pharmacies also noted a definite trend by physicians to say "no" to refill requests.

Pascucci challenged the presidents of other major health professional organizations to urge their memberships to tighten controls over such drugs. His letters went to the associations representing dentists, osteopaths, podiatrists, pharmacists, registered nurses, veterinarians, and hospital administrators. □

It's Working in Oklahoma City

A random survey of Oklahoma City pharmacists conducted by the Oklahoma City Times revealed that prescriptions for amphetamines have taken a "drastic tumble." Some pharmacists reported amphetamine prescriptions down as much as 80 percent.

One pharmacist said, "We used to fill as many as 25 prescriptions a day at this store and now we only fill one or so each week or two. □

potential are written with caution. He asked physicians to warn every patient receiving such prescriptions that there is a potential danger if the drug is used contrary to the physician's instructions.

"Our job as physicians," he said "is to constantly reassess drugs with an abuse potential, and to insure that we as physicians do not inadvertently contribute to drug de-

Clinical Society Meets Next Month

An outstanding program of scientific lectures for both general assemblies and specialty meetings, plus many unusual social events have been arranged for the 41st Annual Fall Conference of the Oklahoma City Clinical Society. Headquarters for the meeting will be the Skirvin Hotel on October 11th, 12th and 13th, 1971.

General Assemblies

General assemblies, during which guest speakers will be presented, will be held from 9:00 a.m. to 4:30 p.m., Monday, Tuesday and Wednesday. These meetings will be held in the convention facilities of the Skirvin Hotel.

Luncheon Meetings

Luncheon meetings will be held each day at the hotel. Monday's

luncheon speaker will be Mrs. Abraham Cockett, wife of one of the guest speakers, Doctor Abraham Cockett. She will present an "Underwater Travelogue—Hawaii, Costa Brava and Catalina."

Two luncheon meetings will be held on Tuesday—medical and surgical, with roundtable discussions.

On Wednesday Edward A. Tyler, M.D., will speak on "Abortion and Its Impact on Our Society." Doctor Tyler is Professor of Psychiatry, Indiana University School of Medicine, Indianapolis.

Specialty Lectures

At 5:30 p.m. on Monday evening, specialty lectures will be held preceding the Oyster and "Keg" Party. Societies holding lectures are: dermatology, E.E.N.T., medicine, Ob-Gyn, surgery, pediatrics, anesthesiology and urology. Members and associate members may attend the specialty lecture of their choice.

Entertainment

The Oklahoma City Clinical Society and Marion Laboratories are inviting all physicians and their wives to an Oyster and "Keg" Party on Monday evening from 6:30 to 8:00 p.m. in the hotel.

Guest speakers will be honored Tuesday evening when the Clinical Society presents a "Night of Polynesia." Cocktails in the "House of Happy Talk" will be followed by a Polynesian dinner in the Persian Room. Colorful Hawaiian clothes will be the mode of the evening and ladies will be welcomed with the traditional flower lei and the men with Hawaiian sashes. Special entertainment will be furnished by Dean Warren Angell and the Oklahoma Baptist University Choral group.

Speakers

Ten out-of-state lecturers who will appear before the assembled groups are: Byron J. Bailey, M.D., (Otolaryngology), University of Texas Medical Branch, Galveston, Texas; Carter M. Ballinger, M.D., (Anesthesiology), College of Medicine, University of Utah, Salt Lake City; Allan S. Chrisman, M.D., (Director-Blood Program), National Red Cross Program; Abraham T. K. Cockett, M.D., (Urology), University of Ro-

chester School of Medicine, Rochester, New York; Heinz F. Eichenwald, M.D., (Pediatrics), University of Texas Southwestern Medical School, Dallas; Albert W. Hartman, M.D., (Surgery), University of Texas Medical School, San Antonio; Edmund D. Lowney, M.D., (Dermatology), Ohio State University Medical School, Columbus, Ohio; J. Paul Shively, (Obstetrics - Gynecology) University of California School of Medicine, San Francisco; Marvin Turk, M.D., (Medicine), University of Washington School of Medicine, Seattle; and Edward A. Tyler, M.D., (Psychiatry), Indiana University School of Medicine, Indianapolis.

Registration

A registration fee of \$25.00 includes all meetings and entertainment. Upon recommendation of the Oklahoma Academy of General Practice, the 1971 Fall Conference is acceptable for 24 hours credit, Category 1, by the American Academy of General Practice.

Ladies' Entertainment

The local medical auxiliary has

planned special daytime events for the wives of attending physicians. These will include a tour on Tuesday of some of the homes in Quail Creek and Nichols Hills, with a progressive luncheon held in various homes. □

Missouri and OU Plan M.D. Day

The Missouri University-Columbia School of Medicine is planning its 12th annual M.D. Day in cooperation with the Oklahoma University School of Medicine. To be held November 5th and 6th, this year's M.D. Day is on the weekend when the Missouri Tigers meet the O.U. Sooners at Missouri.

Faculty members from the University of Oklahoma School of Medicine will join with members of the University of Missouri-Columbia School of Medicine Faculty in presenting a formal program. Following the formal program various departments within the Missouri Medical Center will present departmental programs. Additional information on the program may be obtained from the Conference Section,

Office of Continuing Medical Education, Medical Center, Columbia, Missouri 65201.

The M.D. Day festivities will start Friday evening with a no host social hour and banquet in the Ramada Inn in Columbia. Entertainment will be provided courtesy of the Medical Alumni of the University of Missouri. One ticket to the banquet is included with the registration fee of \$25. Additional tickets for the banquet are \$7.50 each.

On Saturday afternoon, November 6th, the Missouri Tigers will meet the O.U. Sooners in Missouri's Memorial Stadium in Columbia. A block of seats has been reserved for M.D. Day participants. Physicians desiring football tickets must notify the Office of Continuing Education at the above address no later than October 1st.

Lodging for M.D. Day participants has been arranged in several of the local hotels and motels around Columbia. The information on lodging, football tickets, the banquet and buffet luncheons can be acquired from the above address.

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PSYCHIATRY

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Fred H. Jordan, M.D.

Joseph H. Lindsay, M.D.

Jack R. Tomlinson, M.D.

1353 N. Westmoreland ★ Dallas 11, Texas ★ 331-8331

Brown To Advise Medicare



C. ALTON BROWN, M.D.

The Aetna Life and Casualty Medicare Office announced on August 31st the appointment of C. Alton Brown, M.D., Oklahoma City, as an in-office Medicare consultant.

Doctor Brown is a board certified internist and has practiced his specialty for 22 years. He is a graduate of the University of Oklahoma School of Medicine.

As a Medicare Consultant, Doctor Brown will be joining N. F. V. Barkett, M.D., Oklahoma City, a board certified surgeon who has practiced 26 years. Barkett has been an in-office consultant for more than three years.

With the addition of Brown to its staff, Aetna manager Dan Morley feels that the Medicare agency can better fulfill its obligation to the medical community. The consultants spent two to five hours each week reviewing claims that involve possible overutilization, medical necessity, or other problems which cannot be handled by clerical personnel. The physicians, also advise claims processing personnel regarding the determination of maximum benefits allowable on questioned claims. If any medical procedures are outside their special training, the physicians are authorized to contact physician consultants in other

DEATH

T. H. MCCARLEY, M.D.
1883-1971

OSMA's oldest, living, Past-President, T. H. McCarley, M.D., died in Dallas, August 30th, 1971.

A native of Auburn, Kentucky, he received his medical degree from the University of Louisville School of Medicine in 1907. Following a few years of practice in Simmons, Kentucky, Doctor McCarley moved to Atoka, Oklahoma, and in 1914 established his practice in McAlester, where he became dean of the Pittsburg County physicians.

In 1933-34, Doctor McCarley served as President of the Oklahoma State Medical Association, which later named him to Life Membership. The OSMA also honored him with a Fifty-Year Pin for over a half century of devoted service to his profession.

Prominent in medical circles, Doctor McCarley was cited in Who's Who in the South and Southwest; was a member of the State Board of Health for twelve years; and was a Fellow of the American College of Physicians. □

specialized fields.

The vast majority of physicians' claims against Medicare are processed routinely by Aetna claims personnel. Most problem claims can be resolved by Doctors Brown and Barkett. The relatively few remaining problem cases are referred by Aetna to the judgment of the Medical Insurance Review Committee of the Oklahoma State Medical Association.

Any physician who has questions concerning a Medicare claim is invited to contact Aetna Life and Casualty, Medicare Division, 7 South Harvey, Oklahoma City, telephone 405 232-3533. □

Federal Involvement in Health Care Opposed

A resolution adopted in late August by the Executive Committee of the Oklahoma County Republican Committee opposes any further involvement of the federal government in the providing or financing of health care services. The resolution points out that such involvement in other nations has resulted in "doctor shortages, long delays in gaining hospital admission, and severe overcrowding of health care facilities . . ."

The resolution was passed unanimously by the Executive Committee of the Oklahoma County Republicans and then sent out in press release form to all local media.

The complete resolution is as follows:

WHEREAS, the people of the United States have long enjoyed and continue to enjoy a high quality of medical care; and

WHEREAS, such care has been made widely available, at reasonable cost; and

WHEREAS, efforts to involve government in the provision, or financing of health services have frequently resulted in reduced quality and increased cost; and

WHEREAS, programs of national health insurance in other nations have resulted in doctor shortages, long delays in gaining hospital admission, and severe overcrowding of health care facilities; and

WHEREAS, a number of political and labor leaders have attempted to promote the myth that a "crisis" in health care exists in this nation, with a goal of creating support for the establishment of some form of national health insurance

THEREFORE BE IT RESOLVED that the Executive Committee of the Oklahoma County Republican Committee does hereby express its opposition to any further involvement of the federal government in the provision of or financing of health services, and does urge the retention of this nation's private enterprise system of medical and health care. □

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Eliel Named To Head OU Medical Center

The University of Oklahoma Regents in a unanimous telephone vote confirmed the permanent appointment of Leonard P. Eliel, M.D., as Executive Vice-President and Director of the O. U. Medical Center in Oklahoma City.

Announcement of Doctor Eliel had been rumored for nearly two weeks before the official action took place. The announcement was made jointly by the new Oklahoma University President, Doctor Paul F. Sharp, and OU Regents Chairman, H. K. (Tony) Calvert.

Eliel has been serving as Interim Executive Vice-President for the Medical Center affairs for nearly nine months. He had held the post since the death of John P. Colmore, M.D., in November. Colmore had been named as an interim replacement for James Dennis, M.D., who left the center to go to a similar post in Arkansas.

"During his 20 years at the O. U. Medical Center," Doctor Sharp said, "Doctor Eliel has proven his ability as an educator, scientist and administrator. The Medical Center is now in the midst of a multi-million dollar expansion and Doctor Eliel's leadership during this period of rapid growth has been exceptional.

"In the years ahead this exciting medical complex will become increasingly important to the people of Oklahoma." Sharp went on to say, "I look forward to a close association with Doctor Eliel as the medical center works to provide the professional training and research needed to meet this state's need for quality health service."

In accepting the appointment Doctor Eliel said, "It is enormously pleasing to me to accept the Vice-Presidency of a medical center with which I have been associated for so long and which has assumed a national leadership role in many aspects of health science education.

"Our challenge to meet the health care needs of the public has to be faced, and I do not know of any



LEONARD P. ELIEL, M.D.

institution which is in a better position to do it by virtue of the quality of the people it has attracted. It will be a privilege to work with them and the new President Sharp."

At the time of his appointment as Interim Executive Vice-President Doctor Eliel was a Professor of Medicine, Associate to the Director of the Medical Center and Associate Dean of the Medical Center's Graduate College. From June 1965, to June 1970, he was Vice-President and Director of Research for the Oklahoma Medical Research Foundation.

Doctor Eliel came to Oklahoma in 1951 as head of the Cancer Research Section at the foundation and as Associate Professor of Research Medicine in the School of Medicine. He remained as head of the foundation's Cancer Research Section until 1964. He is an authority on cancer and endocrinology research and has published widely in these fields. His major research has involved breast cancer, leukemia and bone disease.

A 1936 graduate from Harvard, Doctor Eliel graduated with honors from Harvard's Medical School in 1940. Eliel is 57 years old, married and the father of two children.

He has held a number of distinguished fellowships and research posts and taught at Cornell University's College of Medicine prior to coming to O. U. He is licensed to practice medicine in Massachusetts, New York, and Oklahoma.

He is a Diplomat of the Board of

Internal Medicine and a Fellow of the American College of Physicians. From 1969 through 1971 he was Chairman of the National Cancer Institute's Clinical Cancer Training Committee.

Doctor Eliel's plans for the Medical Center include extending the public health services of the center. He said, "Our services are far less than what they could and should be. Our facilities for the care of newborn infants, for example, are inadequate. Our emergency room is terribly busy and inadequate. We serve as the emergency service for most of the downtown area and just don't have the personnel or facilities to handle all the patients."

Eliel also hopes to make the center more useful to the practicing physician. He intends to expand the Continuing Education Department by enhancing both its budget and its academic standing.

The rapid growth of the Medical Center makes Doctor Eliel's new job one of the most demanding in the state. The medical center has an annual budget of more than \$21,000,000. In addition, current building programs underway and those envisioned amount to \$89,000,000 worth of capital improvements. The center consists of the Schools of Medicine, Dentistry, Health, Nursing, and Health Related Professions, as well as the Graduate School, University Hospital and the Speech and Hearing Center.

The Medical Center complex is made up of over 4,000 people, including 1,600 students and 450 fulltime faculty members. In addition, over 700 volunteer faculty people serve the center in varying degrees. □

Amphetamines Now Classed As Schedule II Narcotics

Amphetamines and methamphetamines have now been classified as Schedule II narcotics by the Bureau of Narcotics and Dangerous Drugs. This moves them from Schedule III to Schedule II of the new Narcotic and Dangerous Drug Control Act.

Major intent of the move is to impose manufacturing quotas, limit-

ing the amount of legitimate production of stimulants that can be diverted into illicit channels. The change also requires practicing physicians to keep more involved records on amphetamines . . . the same as those required for the so-called hard narcotics. In particular, it places additional requirements on ordering, inventory keeping, and prescribing.

All drugs in Schedule II are treated in the same way as the old "Class A" narcotics. The record keeping, ordering, etc., is basically the same.

The American Medical Association's House of Delegates supported the Bureau's move and called upon all physicians to "limit their use of amphetamines and other stimulant drugs to specific, well recognized, medical indications." □

Medical Heritage Display Slated For Executive Office

A small display of early medical instruments, historical documents, and other items of general interest is being planned by the OSMA Medical Heritage Committee for the association's office building in Oklahoma City. Under the chairmanship of George Garrison, M.D., the committee has authorized purchase of a glass display case for the building's lobby.

A number of items for the display case are already on hand. These include medical license Number 1 issued by the state of Oklahoma to C. S. Bobo, M.D., of Cleveland County on January 4th, 1908. A set of medical saddle bags used by the father of former OSMA President "Red" McClure, M.D., and a number of early medical instruments will also be displayed.

The display in the lobby of the building will be one that changes periodically. A cooperative agreement with the Stovall Museum of the University of Oklahoma campus will give the association access to a large quantity of historical medical material.

Medical Heritage Committee members and the OSMA Executive Staff have been urged by Chairman Garrison to actively seek out the lo-

cations of historical medical materials. The Woman's Auxiliary to the OSMA will be asked to conduct a statewide inventory of such items and to seek to preserve those that might otherwise be lost.

In particular the association would like to acquire photographs of early physicians, doctor's offices, drug stores, hospitals, and other medical centers.

If such photos can be forwarded to the OSMA office in Oklahoma City, they will be photocopied and the original returned to the owner. If the owner would like to donate the picture to the association, such donations will be accepted.

Any physician or physician's family having material of historical interest is encouraged to contact the OSMA Medical Heritage Committee at 601 N. W. Expressway, Oklahoma City, Oklahoma 73118. □

National Drug Education Center Established

A National Drug Education Center has been established at the University of Oklahoma Medical Center. It is one of four such centers set up nationwide under a contract with the National Institute of Mental Health.

One of the center's first projects for the Southwestern part of the United States was to establish a series of "prevention oriented" education programs. The courses are designed to provide training for health and health related professionals and others concerned with the day to day operation of various types of drug programs, as well as those in administrative or policy making positions.

At the present time six courses are scheduled, but only four of them are open for attendance. Each course is seven days in length and has a registration fee of \$10.

The contract with the National Institute of Mental Health provides all tuition costs, textbooks and other educational materials for the courses. The faculty for each course consists of representatives from the Department of Psychiatry at the OU Medical Center, Department of Human Ecology, the Education and Educa-

tional Psychology Department and representatives from numerous other departments of the university that would have information of importance to the course.

Each course will be offered at the University of Oklahoma Medical Center in Oklahoma City. The five courses are as follows: October 24th-31st, November 7th-14th, January 16th-23rd, March 12th-19th, and May 21st-28th.

Physicians or other health care personnel interested in attending such courses should contact Helen Guinn, R.Ph. Director, National Drug Education Center, University of Oklahoma Medical Center, 820 N.E. 15th Street, Oklahoma City, Oklahoma 73104. □

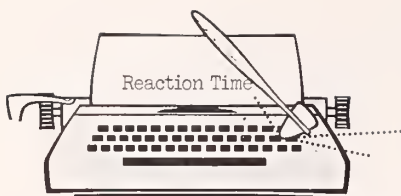
Medical Laboratory Census To Be Conducted in October

Some 2,000 volunteer enumerators will visit every hospital, private clinic, public health and specialty laboratory in the United States during National Laboratory Census Week, October 11-16. The census will be conducted by the American Society of Medical Technologists under a contract funded by the Center for Disease Control for the Department of HEW.

Laboratories will be enumerated by category, services, licensure or certification status, and proficiency testing participation. The number of employees by job title and budgeted vacancies will be counted.

Oklahoma's laboratory census will be conducted under the direction of Mrs. Sandra Heatherly, MSMT (ASCP) of Oklahoma City, and will involve some 260 medical technologists throughout the state.

Besides supporting the need for an accurate count of clinical laboratory operators and manpower, the census data will be used by the Center for Disease Control to evaluate the effectiveness of the National Laboratory Improvement Program in general, and the Clinical Laboratories Improvement Act of 1967 in particular. CDC will also make the results available to professional societies in the medical field. □



July 27, 1971

Lucien M. Pascucci, M.D.

President, OSMA

1923 S. Utica

Tulsa, Oklahoma 74104

Dear Lucien:

All of us in organized medicine are frequently reminded of unmet needs in many areas of medical care. In fact, some of the misinformation put out from various sectors would suggest that physicians and the other members of the team who are delivering that care know the least about those needs. At a time when all of us most need to pull together to keep up with scientific advances and social changes, we can ill afford to dissipate our energies in tensions which provoke disunity in our ranks. In short, I wonder if we physicians have spoken out as we should about these problems in Oklahoma. Have we clarified our own thinking sufficiently to provide the leadership we should in their solutions? Surely no group is more qualified to do that than the very ones who are providing the medical care.

There is already available from both without and within the profession a wealth of data on the major aspects of health care in our state, including available sources. A prime

example is the recently completed survey of rural health care by Doctor Kelly West, made under auspices of OSMA's Council on Rural Health and the Oklahoma Regional Medical Program. Certainly there is no dearth of statistics on existing and projected shortages in the nursing and paramedical fields. What we in organized medicine need most to do right now, it seems to me, is not the mounting of more surveys but rather a synthesis and a dispassionate analysis of the facts we already have, and some clear directives as to orderly courses of action. New forces introduced into the health care field, such as Regional Medical Programs, carry a very real mandate from the public to assess the needs and come up with more adequate solutions. The guidance and active collaboration of physicians is essential if we are to meet those responsibilities which we all share.

Do you think it might be helpful if the Oklahoma State Medical Association appointed a committee or task force, perhaps with outside consultants, to address itself to an overall evaluation of our major health needs and hopefully to assign certain priorities that would give guidance to voluntary health agencies, educational institutions, government, the practicing community and all concerned? Admittedly no one can see around all the corners and provide all the answers but a formal report of consensus on major issues of the day might help clear the air. What, for example, is the magnitude of

manpower shortages in the various health fields? More important, what is the trend? And how about distribution—the rural and ghetto problems? Where should the Physician Assistant fit into the team, if at all? Do the economies and professional advantages of group practice warrant any special measures to accelerate its acceptance in our state? Are we doing all we can and should do to improve the medical services available to the poor? And particularly, how should federally and state financed health programs and planning agencies be utilized to best advantage in serving their needs? Is it sufficient to leave these matters up to supply-and-demand solutions or should they, like medical education, be subjects of deliberate planning and control?

The long history of state medical associations suggests that their justification and role rest more and more in socioeconomic areas such as this. Indeed it is incumbent on organized medicine, if we are to avoid restrictive regimentation from outside our ranks, to display the initiative and leadership of which we are capable in these, as well as in scientific areas of endeavor. I would appreciate your suggestions as to how we might better collaborate to better serve these goals for the people of Oklahoma.

Sincerely,

DALE GROOM, M.D.

DG: dg

cc: Dr. Mark Johnson

Mr. Don Blair, OSMA ☐

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J, The Journal, Oklahoma State Medical Association, 601 N.W. Expressway, Oklahoma City, Oklahoma 73118.

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The scientific program is outstanding, with three in-depth postgraduate courses on Behavioral Problems in Children and Adolescents; Cardiovascular Disease; and Fluid and Electrolyte Balance. Other sessions you'll want to attend include Diagnostic Evaluation and Management of Joint Diseases; Dermatological Problems in Everyday Practice; Current Concepts in Gastroenterology; Office Gynecology; Management of Common Problems, and a Symposium on Diverticular Disease of the Colon. Along with these sessions are dozens of scientific and industrial exhibits to help inform you of the latest research and the newest products and services.

Plan to be there. See the complete scientific program and registration forms in the October 18th issue of JAMA.

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NOTE: Not recommended during the acute recovery phase following myocardial infarction. Patients with cardiovascular disorders should be watched closely; arrhythmias, sinus tachycardia, and prolongation of the conduction time have been reported, particularly with high doses; myocardial infarction and stroke have been reported with drugs of this class. Close supervision is required for hyperthyroid patients or those receiving thyroid medication. Concurrent electroshock therapy may increase the hazards of therapy; such treatment should be limited to patients for whom it is essential. Discontinue the drug several days before elective surgery if possible. Should not be given to patients who have received an MAOI within two weeks.

Contraindications: Known hypersensitivity. Should not be given concomitantly with or within at least 14 days following the discontinuance of a monoamine oxidase inhibitor. Then initiate dosage of amitriptyline HCl cautiously with gradual increase in dosage until optimum response is achieved. Not recommended during the acute recovery phase following myocardial infarction or for patients under 12 years of age.

Warnings: May block the antihypertensive action of guanethidine or similarly acting compounds. Should be used with caution in patients with a history of seizures or urinary retention, or with narrow-angle glaucoma or increased intraocular pressure. Patients with cardiovascular disorders should be watched closely; arrhythmias, sinus tachycardia, and prolongation of the conduction time have been reported, particularly with high doses; myocardial infarction and stroke have been reported with drugs of this class. Close supervision is required for hyperthyroid patients or those receiving thyroid medication. May impair mental and/or physical abilities required for performance of hazardous tasks, such as operating machinery or driving a motor vehicle. Safe use during pregnancy and lactation has not been established; in pregnant patients, nursing mothers, or women who may become pregnant, weigh possible benefits against possible hazards to mother and child.

Precautions: When used to treat the depressive component of schizophrenia, psychotic symptoms may be aggravated; in manic-depressive psychosis, depressed patients may experience a shift toward the manic phase, and paranoid delusions, with or without associated hostility, may be exaggerated; in any of these circumstances, it may be advisable to reduce the dose of amitriptyline HCl, or to use a major tranquilizing drug, such as perphenazine, concurrently.

When given with anticholinergic agents or sympathomimetic drugs, close supervision and careful adjustment of dosages are required. May enhance the response to alcohol and the effects of barbiturates and other CNS depressants. The possibility of suicide in depressed patients remains during treatment and until significant remission occurs; this type of patient should not have easy access to large quantities of the drug. Concurrent electroshock therapy may increase the hazards of therapy; such treatment should be limited to patients for whom it is essential. Discontinue the drug several days before elective surgery if possible.

Adverse Reactions: *Note:* Included in this listing are a few adverse reactions not reported with this specific drug. However, pharmacological similarities among the tricyclic antidepressant drugs require that each reaction be considered when amitriptyline is administered.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitation, myocardial infarction, arrhythmias, heart block, stroke. **CNS and Neuromuscular:** Confusional states; disturbed concentration; disorientation; delusions; hallucinations; excitement; anxiety; restlessness; insomnia; nightmares; numbness, tingling, and paresthesias of the extremities; peripheral neuropathy; incoordination; ataxia; tremors; seizures; alteration in EEG patterns; extrapyramidal symptoms. **Anticholinergic:** Dry mouth, blurred vision, disturbance of accommodation, constipation, paralytic ileus, urinary retention, dilatation of urinary tract. **Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue. **Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. **Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, parotid swelling. **Endocrine:** Testicular swelling and gynecomastia in the male, breast enlargement and galactorrhea in the female, increased or decreased libido. **Dther:** Dizziness, weakness, fatigue, headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, drowsiness, jaundice. **Withdrawal Symptoms:** Abrupt cessation of treatment after prolonged administration may produce nausea, headache, and malaise; these are not indicative of addiction. **How Supplied:** Tablets containing 10 mg and 25 mg amitriptyline HCl, in single-unit packages of 100 and bottles of 100, 1000, and 5000; tablets containing 50 mg amitriptyline HCl, in single-unit packages of 100 and bottles of 100 and 1000; for intramuscular use, in 10-cc vials containing per cc: 10 mg amitriptyline HCl, 44 mg dextrose, and 1.5 mg methylparaben and 0.2 mg propylparaben as preservatives.

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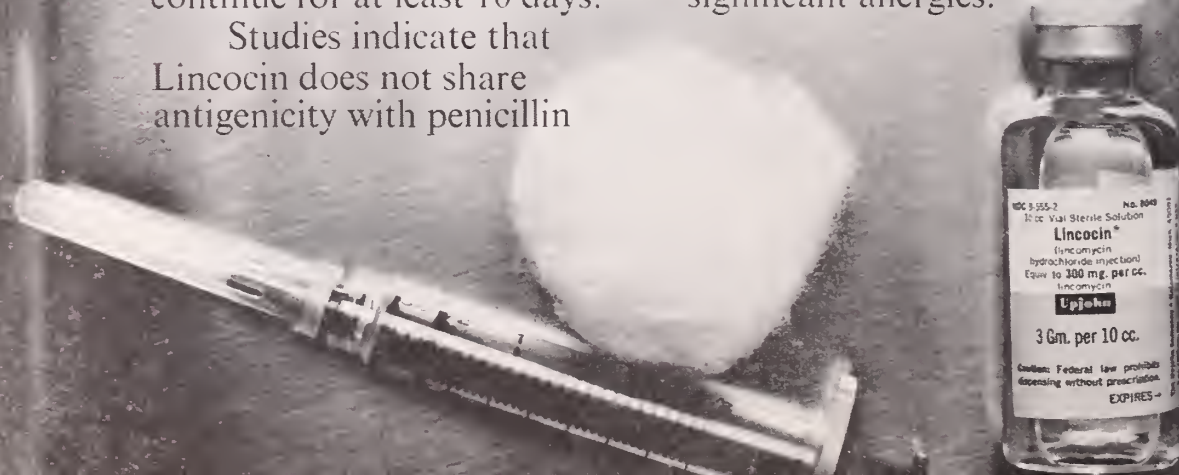


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(lincomycin hydrochloride,
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CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. **Local reactions**—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

HOW SUPPLIED: 250 mg. and 500 mg. Capsules—bottles of 24 and 100.

Sterile Solution, 300 mg. per ml.—2 and 10 ml. vials and 2 ml. syringe.

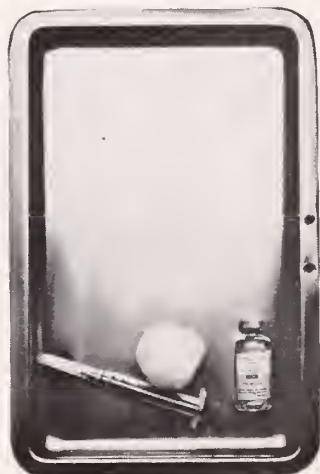
Syrup, 250 mg. per 5 ml.—60 ml. and pint bottles.

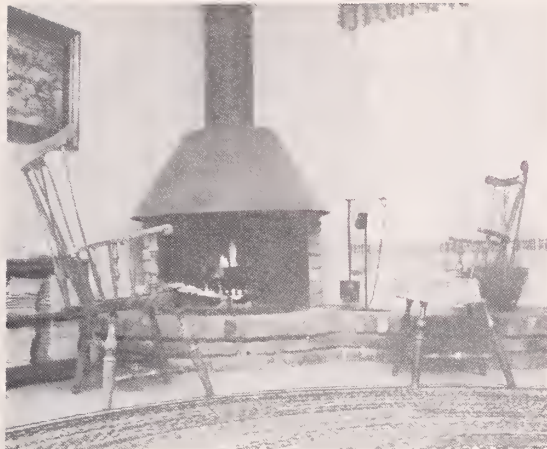
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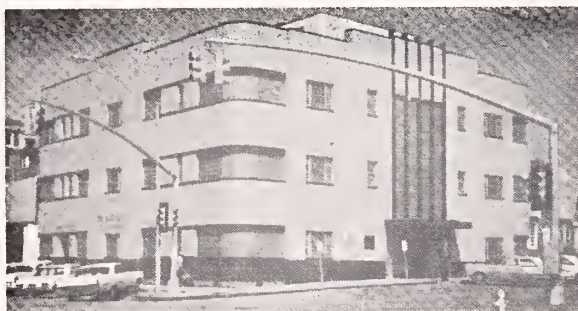
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A November, 1970 directive from the SSA to Medicare Part B carriers apparently had been widely misunderstood as placing a fixed limit on the number of nursing home visits to patients. In addition BHI officials point out that the directive does not apply to patients whose institutional care is being paid under Medicare Part A. ☐

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The JOURNAL

of the Oklahoma State Medical Association

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January Issue

Editorial, Scientific, Book Reviews	November 15, 1971
Advertising Copy	December 15, 1971
News Copy, Miscellaneous Ads	January 1, 1972

CONTRIBUTIONS

Articles accepted for publication, including manuscripts of annual meeting papers, are the sole property of *The Journal* and must not have been published elsewhere. Authority for approval of all contributions rests with the Editorial Board, and the Board reserves the right to edit any material submitted. Manuscripts should be typewritten, double spaced and submitted in original and one copy. Receipt of manuscripts will be acknowledged and unused manuscripts returned. Used manuscripts will be returned on request. *The Journal of the Oklahoma State Medical Association* is not responsible for the statements or opinions of any contributor.

STYLE

Footnotes, bibliographies, and legends for illustrations should be submitted on separate sheets, double-spaced. Bibliographies should follow in order of: name of author, title or article, name of periodical with volume number, page and date of publication. These references should be alphabetized and numbered in sequence.

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

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All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be modest charge for this service.

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Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Report on the National Convention of the Woman's Auxiliary to the American Medical Association, Atlantic City, New Jersey, June 20th-24th, 1971.

Attendance at this National Convention of the Woman's Auxiliary to the American Medical Association was not only inspirational and exciting, but the added thrill of seeing and hearing the President of the United States was an event we shall always remember.

The 48th annual meeting was held at the Hotel Traymore with Mrs. R. C. L. Robertson presiding. She was unruffled and calm, in spite of the color guard not appearing and a small fire in the wings, which was smokey but fast extinguished.

Mrs. Clifford Bassett, Mrs. Harlan Thomas, Mrs. Scott Hendren, Mrs. Malcolm Phelps and Mrs. Port Johnson were your official delegates.

Mrs. Robertson, representing the 90,000 members of the woman's auxiliary presented Doctor John Chenault, foundation chairman of AMA-ERF with a check for \$550,-927.01, the largest contribution ever received for educational purposes.

President Richard M. Nixon's appearance was the highlight of the meeting. We were indeed fortunate to experience this event—the excitement and anticipation, the TV set-up, the Army Band, the security measures and finally the President and Mrs. Nixon. In his address to the AMA House of Delegates, the AMA was asked to develop a new "Project USA" to support the administration's recently announced war against drugs. The AMA Board of Trustees enthusiastically endorsed this effort.

Our own Mrs. Virgil Ray Forester is the National Courtesy Resolutions Committee Chairman. After presenting her resolutions, she continued in a lighter vein with the presentation of her committee members in an improvised color guard marching down the

aisle with small American flags to music accompaniment, up on the podium and presented a small purple cow and Brahma bull to Mrs. Robertson. This humorous touch was thoroughly enjoyed by all.

Mrs. G. Prentiss Lee, of Portland, Oregon, was installed as our new national president. In her inaugural address, Mrs. Lee pointed out that the auxiliary has always recognized the importance of health education. "Challenge of the Changing Times" was the topic of her address. "We are looking boldly into the future as the woman's auxiliary approaches its 50th year. We have a goal of 100,000 members and, to be successful, we must be action-oriented and the action begins in the county auxiliary with the individual member—YOU."

She urged auxiliary members to support the AMA's Mediredit Plan because it is a positive program for voluntary health insurance. We must unite to inform members in our communities how the Mediredit Plan can eliminate financial barriers to health care.

The new officers for the 1971-72 Woman's Auxiliary to the AMA were installed and are: Mrs. Lee, president; Mrs. R. F. Beckley, Pennsylvania, president-elect; Mrs. W. C. Scrivner, Illinois, 1st vice president; Mrs. R. W. Coon, Vermont, constitutional secretary; and Mrs. F. K. Anderson, California, treasurer. The regional vice-presidents are Mrs. Tomas Anton, Maine, Eastern; Mrs. Chester Young, Kansas, North Central; Mrs. Amos Johnson, North Carolina, Southern; and Mrs. Wm. Blackstone, Washington, Western.

This report was made by Mrs. Port Johnson who was one of our delegates to the convention. □

Mrs. J. B. Silman
Rt. #4, 2203 Ravenwood
Norman, Oklahoma 73069

All national health insurance proposals now before Congress would further inflate health care costs according to a report from the Health Education and Welfare Department. The report was an actuarial study prepared for the Congressional committee that will consider the health care proposals. Among the most expensive would be the proposal backed by Senator Edward Kennedy (D-Mass.), which would cost tax payers an additional \$59.4 billion if it went into full operation in fiscal 1974. Additional costs of other programs—the administration's program, \$2.6 billion; AMA's Mediredit, \$6.3 billion; the health insurance industry's program, \$7.3 billion; Javits bill, \$41.6 billion. While Kennedy attacked the report as "a clumsy numbers game," HEW officials said the study was politically unbiased and that its methodology had been reviewed and found sound by eight outside experts. The report said that federal spending under the Kennedy bill, including existing programs that it would take over, would total \$81.6 billion. But the proposed financing would raise only \$57 billion, leaving the program under financed by 43 percent or \$24.6 billion. This would necessitate raising employee and employee payroll taxes by \$12.3 billion, and other taxes would have to be lifted by \$2.6 billion to keep the Kennedy program afloat. Operation of the Kennedy program in 1974 would bring the total health spending in the United States to \$113.8 billion.

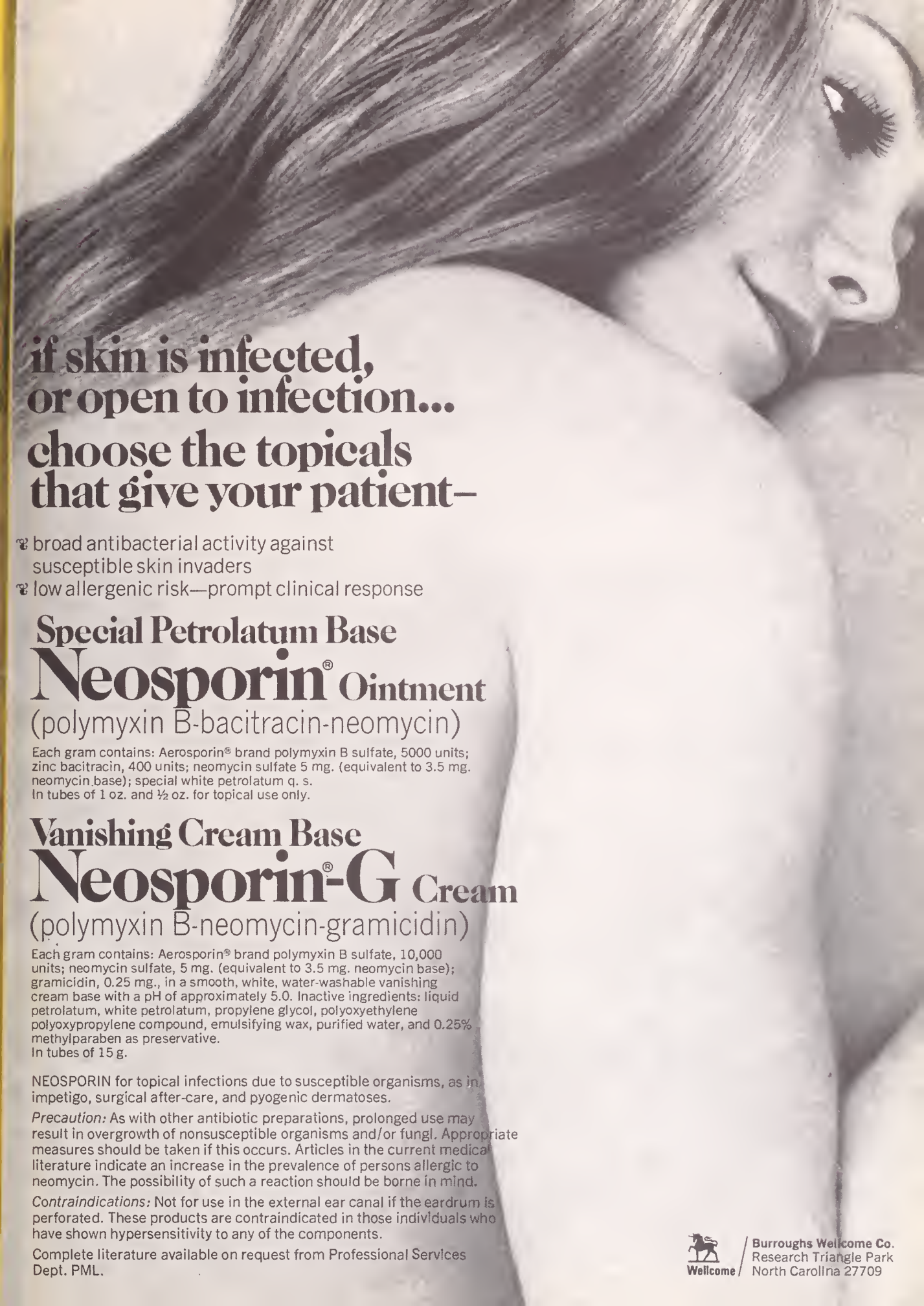
Accelerated medical programs are becoming more popular. Nearly one-fourth of the nation's medical schools now have accelerated programs for some or all students according to the Association of American Medical Colleges. Twenty-five schools currently confer the M.D. degree in less than four years, but the nature of the shortened curricula varies widely from one school to another.

Eighteen medical schools now offer three year programs, students at four schools can earn their M.D. degree in three and one-half years, and those at three others complete training in three and one-fourth years.

Everyone wants to get in on the act. Although there are nearly twelve national health care plans currently in existence, now the American Association of Medical Clinics wants to have its own. The plan was described at the association's meeting in Cleveland, Ohio, in mid-September. The National Medical Association is working up its own national health insurance plan and expects to have it introduced in Congress in September.

What is a "Health Maintenance Organization"? The controversial organizations known as "HMOs" are mentioned in a number of different national health insurance plans. They were originally thought up by some official in the Health Education and Welfare Department and mentioned as a possible alternative method of supplying health care. The problem is, no one knows exactly what they are. The Senate Finance Committee staff asked HEW some tough questions about HMOs and set off a series of conferences to formulate a clearer definition of just what they could be.

At last, an articulate spokesman in the popular press. Harry Schwartz, one of the senior editors of the New York Times recently published an article in Saturday Review entitled "Health Care in America: A Heretical Diagnosis." The article was an objective discussion of national health insurance and health care in America in general, and warrants reading by every physician. Among other things he said, "The nation's real problems of medical care can best be met by measures that focus on particular trouble areas, rather than by violent transformation of the entire complex medical system that would affect equally all parts, those working well and those working poorly." After offering his own ideas about national health insurance he said, "There are many other ways in which the present medical system can be intelligently and humanly improved. But these needed and useful improvements can be made within the context of a continued pluralistic system." He ended up by pointing out, "based on the record of the past, we have every reason to suspect that if the revolutionary proposals for transforming American medicine are adopted and implemented, medical care in this country will cost more while providing less satisfaction and poorer treatment for millions." □



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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impend-

ing depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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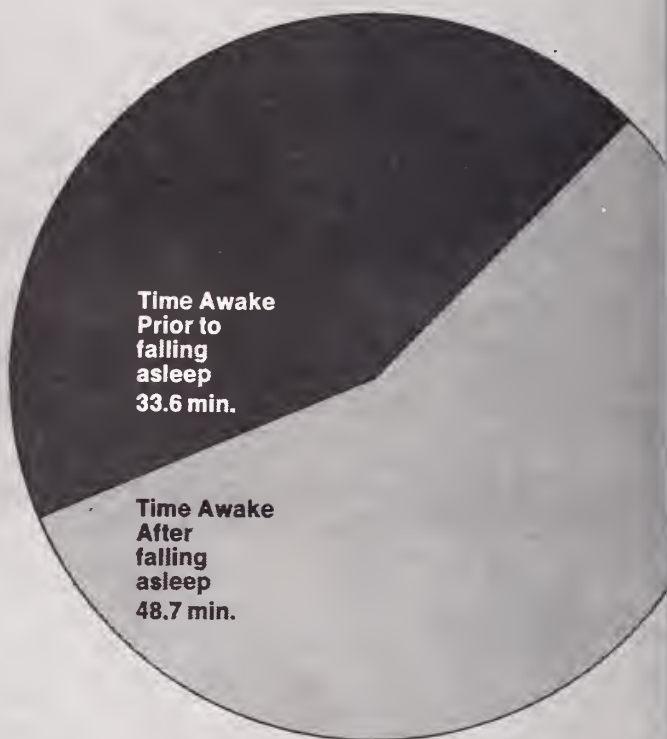
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References: 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

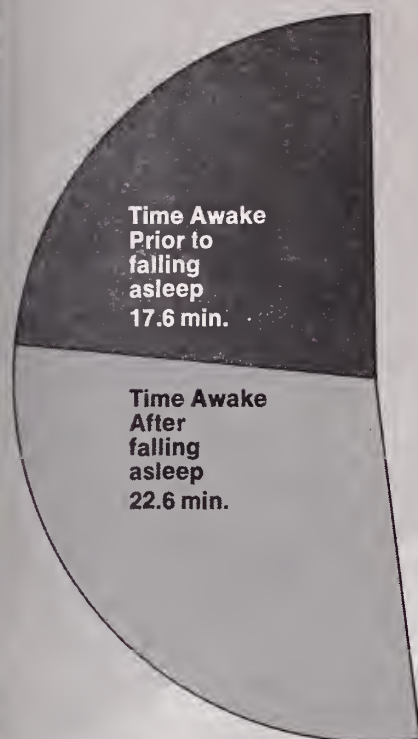
2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

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and slept through the night

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Average sleep laboratory measurements in cited studies

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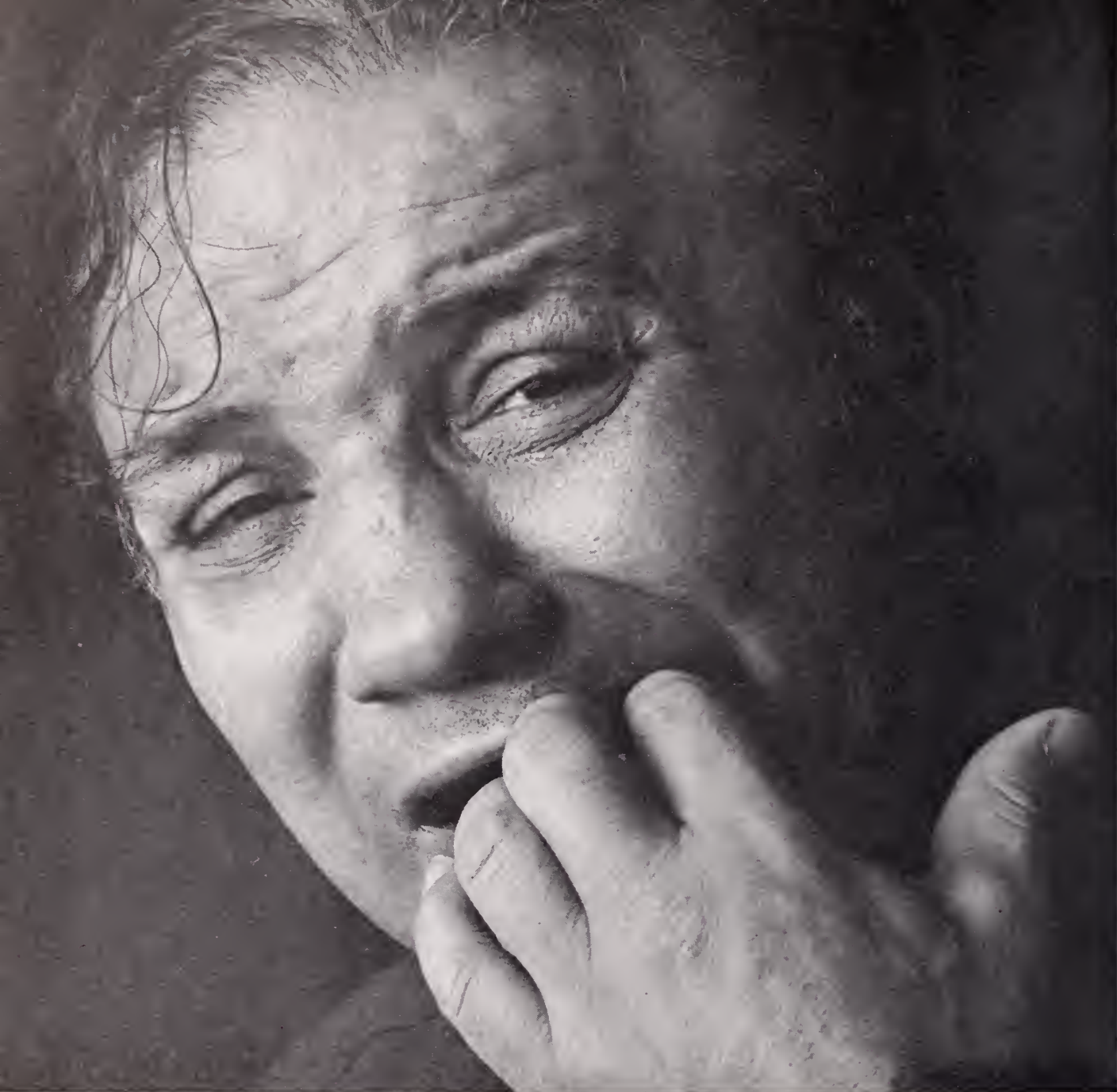
Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

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*Because bacterial proliferation in the
urine is a function of time and retention,^{1,2,3}
dawn can be...*

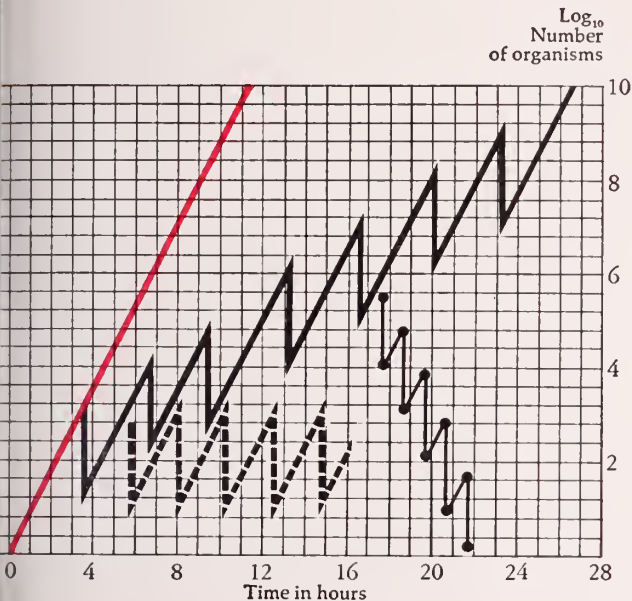
the darkest hour.



Voiding frequency and bacterial build-up¹

Graph shows the theoretical effect of various voiding frequencies on bacterial proliferation in the urine.

- maximum growth rate during the overnight period
- voiding every 3½ hours
- - - voiding every 2½ hours
- voiding every hour: the "washout" effect



For through-the-night coverage

Force fluids. Frequent micturition. It's hard to fault this regimen for dealing effectively with an acute bladder infection. Another fundamental adjunct to treatment is drug therapy for round-the-clock antibacterial coverage. Coverage that may be especially desirable during the night hours of sleep when urinary retention favors bacterial build-up in the bladder. This is the coverage that Gantanol (sulfamethoxazole) *b.i.d.* can provide.

Controls susceptible gram-negative and gram-positive bacteria

Within 2 to 3 hours of the initial 2-Gm adult dose, effective antibacterial levels in blood and urine begin working to control the most common urinary tract invaders. Subsequent 1-Gm *b.i.d.* doses maintain coverage your patient needs to fight *E. coli* and other susceptible gram-negative and gram-positive pathogens.

Your options: tablets or suspension

Prescribe Gantanol Tablets or the pleasant-tasting Suspension. Either dosage form provides your patient with the all-day, all-night coverage she needs to fight off nonobstructed cystitis.

References: 1. O'Grady, F., and Cattell, W. R.: *Brit. J. Urol.*, 38:156, 1966. 2. Hinman, F., Jr., and Cox, C. E.: *J. Urol.*, 96:491, 1966. 3. Lapides, J., et al.: *J. Urol.*, 100:552, 1968.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Effective in acute, recurrent or chronic urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) and in the absence of obstructive uropathy or foreign bodies. *Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response. Add aminobenzoic acid to culture media of patients receiving sulfonamides. Resistant organisms present a current problem to the usefulness of antibacterial agents. Blood levels should be measured in patients receiving sulfonamides for serious infections, since there may be wide variations with identical doses; 20 mg/100 ml should be the maximum total sulfonamide level, as adverse reactions occur more frequently above this level.

Contraindications: Sulfonamide hypersensitivity; infants less than 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis); pregnancy at term and during nursing period.

Warnings: Safe use in pregnancy has not been established, and teratogenicity potential has not been thoroughly investigated. Sulfonamides will not eradicate or prevent sequelae to group A streptococcal infections, i.e., rheumatic fever, glomerulonephritis. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported; early clinical signs such as sore throat, fever, pallor, purpura or jaundice may indicate serious blood disorders. Complete blood counts and urinalysis with careful microscopic examination are recommended frequently during sulfonamide therapy. Clinical data are insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Use with caution in patients with impaired renal or hepatic function, severe allergy, bronchial asthma and in glucose-6-phosphate dehydrogenase-deficient individuals. In the latter, dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *allergic reactions:* erythema multiforme (Stevens-Johnson syndrome), skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *gastrointestinal reactions:* nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; and *miscellaneous reactions:* drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide and thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age, except adjunctively with pyrimethamine in congenital toxoplasmosis. Usual dosage is as follows:

Adults—2 Gm (4 tabs or teasps.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection. *Children*—0.5 Gm (1 tab or teasps.)/20 lbs of body weight initially, followed by 0.25 Gm/20 lbs *b.i.d.* Maximum dose for children should not exceed 75 mg/kg/24 hrs.

Supplied: Each tablet or teaspoonful (5 ml) of suspension contains 0.5 Gm sulfamethoxazole.

In nonobstructed urinary tract infections

Gantanol[®] B.I.D. (sulfamethoxazole)

12 hours of therapy with every dose



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Free toxicological consultation and information on medicinal and commercial products is available by phone when your patients are poisoned. Center is open 24 hours each day, seven days a week, with professionally trained staff present. Call area code 713, SO 5-1420, SO 5-2408 or 765-1011 University of Texas Medical Branch, Galveston, Texas 77550. Supported by PHS-CPF-69-21.

SALUTENSIN®

hydroflumethiazide, 50 mg./reserpine, 0.125 mg./protoveratrine A, 0.2 mg.

Brief Summary of Prescribing Information—9-9/22/69.

For complete information consult Official Package Circular.

Indications: Essential hypertension. Use cautiously in patients with renal insufficiency, particularly if they are digitalized.

Contraindications: Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

Warnings: Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distension, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients. **Use in Pregnancy:** Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss or protoveratrine A may cause digitalis intoxication. Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Stop therapy if protoveratrine A induces digitalis intoxication. Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhosis. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

Adverse Reactions: *Hydroflumethiazide:* Skin rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation. *Reserpine:* Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares. *Protoveratrine A:* Nausea, vomiting, cardiac arrhythmia, prostration, blurring vision, mental confusion, excessive hypotension and bradycardia. (Treat bradycardia with atropine and hypotension with vasopressors.)

Usual Dose: 1 tablet b.i.d.

Supplied: Bottles of 60, 600, and 1000 scored 50 mg. tablets.

Service items pictured at right and Salutensin samples are available on request from your Bristol Representative or on written request.

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Division of Bristol-Myers Company
Syracuse, New York 13201

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Dr. Fox...*



*Following my Doctor's
good advice...*

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with this to advise me*



*Dining out—
on my diet!*



*Getting the exercise
I need—*

HINTS TO HELP MAKE HYPERTENSION EASIER TO LIVE WITH:

- Get plenty of sleep.
8 hours a night is good, and
a nap a day is better.
- Avoid strenuous activities
that you aren't used to.
- Drink alcoholic beverages
only in moderation.
- Don't smoke.
Especially cigarettes.
- Try to avoid undue emotional
strain and tension.
- Guide your eating habits by
the restrictions on the
reverse of this reminder card.

This goes where I go...

PATIENT'S NAME *Mrs. A. Collins*
AGE *55* DATE _____

Rx

Salutensin No. 30
*Sig: one tablet
twice daily*

A. Fox M.D.

SALUTENSIN®

hydroflumethiazide, 50 mg./reserpine,
0.125 mg./protoveratrine A, 0.2 mg.

*This helps make
my hypertension
easier to live with, too.*




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Helps overpower pain

Each tablet contains: aspirin gr. 3 1/2,
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No. 3 contains codeine phosphate* (32.4 mg.) gr. 1/2.
No. 4 contains codeine phosphate* (64.8 mg.) gr. 1.

* (Warning—may be habit forming.)

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PATIENT										CLASS OF PAYMENT										ACCOMMODATION										BACTERIOLOGY									
Gordon Davies 68 School St. Northport L.I., N.Y. 11768										35 yrs 291-2										Date: 7/20/71 Ordered By: Dr. Goldstein										Admitting Diagnosis: Pneumonia Prior Antibiotic Treatment:									
I. PYOGENS <input type="checkbox"/> SMEAR OR MICRO <input checked="" type="checkbox"/> CULTURE										Specimen (Source): sputum										FOR LAB USE ONLY:										Report: An abundance of <i>Pseudomonas aeruginosa</i> grew (pure culture)									
II. ACID FAST BACILLI <input type="checkbox"/> SMEAR <input type="checkbox"/> CULTURE																																							
III. FUNGI <input type="checkbox"/> SMEAR <input type="checkbox"/> CULTURE																																							
BACTERIOLOGY																																							

the
choice is
clear:

Pyopen[®]
 (sterile disodium carbenicillin)

A serious infection... *Pseudomonas*, confirmed by pure culture. Fortunately, the strain proves sensitive to carbenicillin and the patient is not allergic to penicillins. The choice is clear: Pyopen.

Unlike other antibiotics currently available for the treatment of Gram-negative sepsis, there are no reports of nephrotoxicity or ototoxicity with Pyopen therapy. Its effectiveness against *Ps. aeruginosa* and *Proteus* species (particularly indole-positive strains) has been amply confirmed by clinical experience and microbiologic studies.

Pyopen is a product of Beecham, the company which pioneered most of today's semi-synthetic penicillins. Your Beecham-Massengill representative would like to give you proof of our dedication to the concept of Total Service.

THE TOTAL SERVICE CONCEPT:

Beecham-Massengill's dedication to the concept of total service is exemplified by the Pyopen Program — offering valuable teaching-learning materials and an added measure of personal attention: *Gram-Negative Sepsis*, a multimedia presentation by leading American medical authorities... *A Profile of Pseudomonas*, a monograph for the clinical microbiologist... *24-hour consultation service* in matters relating to carbenicillin (phone: 201-778-9000)... *emergency supply*, a novel plan for assuring the continual availability of Pyopen to hospitals specifying this brand of carbenicillin.

For additional information about the Beecham-Massengill Total Service Concept see our representative or write to us directly.

BEECHAM-MASSENGILL PHARMACEUTICALS
Div. of Beecham Inc.
Bristol, Tennessee 37620

PRESCRIBING INFORMATION **Indications:** Primarily for treatment of infections due to susceptible strains of *Pseudomonas aeruginosa*, *Proteus* species (particularly indole-positive strains), and certain *Escherichia coli*. Clinical effectiveness has been demonstrated in the following infections when due to these organisms: Urinary tract infections; severe systemic infections and septicemia; acute and chronic respiratory infections (while clinical improvement has been shown, bacteriologic cures cannot be expected in patients with chronic respiratory disease and cystic fibrosis); soft tissue infections. Although PYOPEN (disodium carbenicillin) is indicated primarily in Gram-negative infections, its activity against Gram-positive organisms should be kept in mind when both Gram-positive and Gram-negative organisms are isolated (see Actions). **Note:** During therapy, sensitivity testing should be repeated frequently to detect the possible emergence of resistant organisms. **Actions:** Organisms found to be susceptible *in vitro* include: **Gram-Negative Organisms**—*Ps. aeruginosa*, *Proteus mirabilis*, *Pr. morganii*, *Pr. rettgeri*, *Pr. vulgaris*, *E. coli*, *Enterobacter* species, *Salmonella* species, *Hemophilus influenzae*, and *Neisseria* species. **Gram-Positive Organisms**—*Staphylococcus aureus* (nonpenicillinase-producing), *Staph. albus*, *Diplococcus pneumoniae*, Beta-hemolytic streptococci, and *Streptococcus faecalis*. Some newly emerging pathogenic strains of *Herellea*, *Mima*, *Citrobacter*, and *Serratia* have also shown *in vitro* susceptibility. Not stable in the presence of penicillinase. *Klebsiella* species are resistant. Some strains of *Pseudomonas* have developed resistance fairly rapidly. **Contraindications:** Known penicillin allergy. **Warnings:** Serious and occasional fatal hypersensitivity (anaphylactic) reactions have been reported in patients on penicillin therapy. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens. There have been reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, appropriate therapy should be instituted and discontinuance of disodium carbenicillin therapy considered, unless the infection is life threatening and only amenable to disodium carbenicillin therapy. The usual agents (antihistamines, pressor amines, and corticosteroids) should be readily available. **Usage in Pregnancy:** Safety for use in pregnancy has not been established. **Precautions:** As with any other potent agent, it is advisable to check periodically for organ-system dysfunction, including renal, hepatic, and hematopoietic systems, during prolonged therapy. Emergence of resistant organisms, such as *Klebsiella* species and *Serratia* species, which may cause superinfection, should be kept in mind. Each gram contains 4.7 mEq sodium; in patients where sodium restriction is necessary, such as cardiac patients, periodic electrolyte determinations and monitoring of cardiac status should be made. Observe patients with renal impairment for bleeding manifestations and adhere strictly to dosage recommendations. If bleeding manifestations appear, discontinue antibiotic and institute appropriate therapy. As with any penicillin preparation, the possibility of an allergic response, including anaphylaxis, may occur, particularly in a hypersensitive individual. **Administration:** Intramuscular injections should be made well within the body of a relatively large muscle (not into the lower and mid-third of the upper arm), and aspiration is necessary to help avoid inadvertent injection into a blood vessel. May be given by either intravenous injection or intravenous infusion. After reconstitution with Sterile Water for Injection unused portions should be discarded after 24 hours if stored at room temperature, or after 72 hours if refrigerated. **Adverse Reactions:** **Hypersensitivity Reactions**—Skin rashes, eosinophilia, pruritus, urticaria, drug fever, and anaphylactic reactions. **Gastrointestinal Disturbances**—Nausea. **Hemic and Lymphatic Systems**—Hemolytic anemia, thrombocytopenia, leukopenia, neutropenia, in uremic patients receiving high doses (24 gm/day), hemorrhagic manifestations associated with abnormalities of coagulation tests, such as clotting and prothrombin time. **Hepatic and Renal Studies**—SGOT and SGPT elevations have been observed, particularly in children. To date, no clinical manifestations of renal disorders have been demonstrated. **Central Nervous System**—Convulsions or neuromuscular irritability could occur with excessively high serum levels. **Local Reactions**—Pain at the site of injection, sometimes accompanied by induration. Vein Irritation and Thrombophlebitis—particularly when undiluted solution is injected directly into the vein. **How Supplied:** Available in 1 Gm. and 5 Gm. vials.

Before prescribing or administering, see package circular or PDR.



Additional information available to the profession on request.
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101488



**The concert was just underway,
When to the conductor's dismay
Cramps and diarrhea,
Did so quickly appear,
The maestro no longer could stay.**

Because diarrhea with cramping, nausea, and painful straining can strike at the most inopportune time, it takes a comprehensive agent to treat the total diarrheal syndrome and help get the patient back on the job. That's why so many physicians rely on Donnagel, especially during the fall and winter months when "flu" and viral gastroenteritis usually hit their peak.

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clear the tract with the

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The coughing season is here again. Time to rely on the four Robitussins and Cough Calmers to help clear the lower respiratory tract. All contain glyceryl guaiacolate, the efficient expectorant that works systemically to help increase the output of lower respiratory tract fluid. The enhanced flow of less viscid secretions soothes the tracheobronchial mucosa, promotes ciliary action, and makes thick, inspissated mucus less viscid and easier to raise. Available on your prescription or recommendation.

For coughs of colds and "flu"

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Each 5 cc. contains:

Glyceryl guaiacolate 100.0 mg.
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For unproductive allergic coughs

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(warning: may be habit forming)
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Non-narcotic for 6-8 hr. cough control

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Each 5 cc. contains:

Glyceryl guaiacolate 100.0 mg.
Dextromethorphan
hydrobromide 15.0 mg.
Alcohol, 1.4%

*Clears sinuses and nasal
stiffness as it relieves cough*

Robitussin-PE

Each 5 cc. contains:

Glyceryl guaiacolate 100.0 mg.
Phenylephrine hydrochloride 10.0 mg.
Alcohol, 1.4%

*Robitussin-DM in solid form
for "coughs on the go"*

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hydrobromide 7.5 mg.

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benefit
chart**

All 5 Robitussins have an EXPECTORANT-DEMULCENT action. Keep this handy chart as a guide in selecting the formula that provides the *extra* benefits you want for your patient.

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ROBITUSSIN A-C®					
ROBITUSSIN-DM®					
ROBITUSSIN-PE®					
COUGH CALMERS®					

A. H. Robins Company, Richmond, Va. 23220

A·H·ROBINS

HAPPINESS IS A DEAD PINWORM



*Mintezol[®]
is nonstaining*

MINTEZOL[®]

(THIABENDAZOLE [MSD])

SUSPENSION, 500 mg per 5 cc

You'll rely on MINTEZOL (Thiabendazole, MSD) often for pinworm disease. Not just because that's a very common helminthic infestation, but because MINTEZOL has such a high degree of efficacy. MINTEZOL also provides an unusually wide range of action—against threadworm, hookworm, whipworm, and large roundworm disease. This broad spectrum of activity makes it particularly effective in these mixed worm infestations. MINTEZOL isn't a dye. So you won't hear complaints about stained teeth, clothing, or bed linen. The most frequently occurring side effects have been anorexia, nausea, vomiting, and dizziness.



Contraindications: History of hypersensitivity to thiabendazole.

Warnings: May impair alertness; operation of automobiles and other activities made hazardous by diminished alertness should be avoided. If hypersensitivity reactions occur, drug should be discontinued immediately and not resumed; erythema multiforme, including Stevens-Johnson syndrome (with a fatal case), has been associated with thiabendazole therapy in children. Safe use in pregnancy or lactation has not been established.

Precautions: Since thiabendazole is metabolized in the liver and excreted by the kidneys, hepatic and renal function should be carefully monitored in patients with dysfunction of these organs.

Adverse Reactions: Frequently encountered are anorexia, nausea, vomiting, and dizziness. Less frequently, diarrhea, epigastric distress,

pruritus, weariness, drowsiness, giddiness, and headache have occurred. Rarely, tinnitus, collapse, abnormal sensation in eyes, blurring of vision, hyperirritability, numbness, hyperglycemia, xanthopsia, enuresis, perianal rash, cholestasis and parenchymal liver damage, hypotension, and a transitory rise in cephalin flocculation and SGOT. Hypersensitivity reactions include: fever, facial flush, chills, conjunctival injection, angioedema, anaphylaxis, skin rashes, erythema multiforme (including Stevens-Johnson syndrome), and lymphadenopathy. Appearance of live Ascaris in the mouth and nose has been reported on rare occasions.

Some patients may excrete a metabolite which imparts an odor to urine, much like that which occurs after ingestion of asparagus. Crystalluria without hematuria has been reported on occasion, but has promptly subsided with dis-

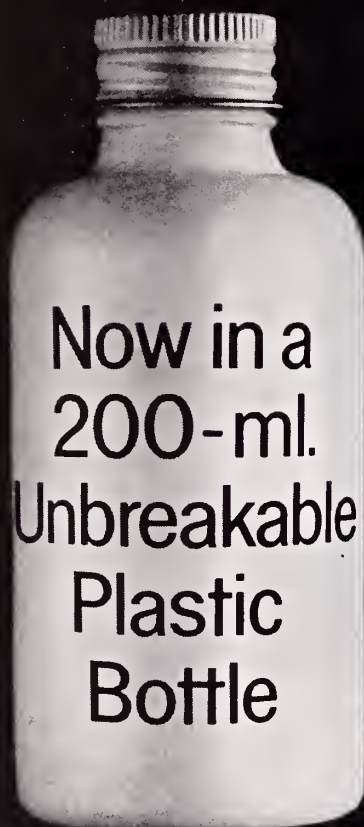
continuation of therapy; while the etiologic role of thiabendazole has not been established, the possibility of crystalluria should be kept in mind. Transient leukopenia has been reported in a few patients, but the cause and effect relationship in these cases has not been established.

NOTE: In children weighing less than 30 pounds, clinical experience with thiabendazole for treatment of intestinal parasitosis has been limited. Thus, the benefits of this therapy should be weighed against the possibility of adverse reactions.

Supplied: Suspension, containing 500 mg per 5 cc, in bottles of 120 cc.

For more detailed information, consult your MSD representative or see the Direction Circular, Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

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Now in a
200-ml.
Unbreakable
Plastic
Bottle

Same price as
150-ml. size *

Two dosage
strengths—
125 mg./5 ml.
and
250 mg./5 ml.

V-Cillin K[®], Pediatric

potassium
phenoxymethyl
penicillin



100210

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available to the
profession on request.*

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**Based on Lilly selling price to wholesalers.*

Dear Patient:

I UNDERSTAND that you object to being charged for the telephone consultation I rendered you last month. As I have known you to be a reasonable person, fair in your judgment and hesitant to criticize, I must assume that you do not comprehend the nature of my services or the basis of my fees. For this, I apologize. I feel that your full comprehension of these matters is my responsibility. Please, therefore, let me explain.

As your physician, all I have to offer you is my time and whatever talents my education and experience may make available to you in that time. My share of a day is 24 hours. When I have used up all the minutes in those 24 hours, my day is gone and whatever else I had wanted to accomplish must go undone. Last month I gave you eight minutes of one of my days in order to discuss a matter which was troubling you. Not really much time, your eight minutes on the telephone. But you were one of sixteen patients who called that day and the total amount of time I spent in telephone consultations was one hour and 36 minutes. I spent those 96 minutes rendering what I presumed to be a service to you and my other patients who called. Thus, I had 96 minutes less to give to other patients, my family, my study or my rest. Had it been possible, I would have bought those 96 minutes for twice the price I asked for them.

You have never objected to being charged for an office visit, even on those occasions when the entire time was spent in trading questions and answers—and in expressing my recommendations. And that is exactly what took place during our telephone conversation last month. You may not realize it, but the details of your call and my recommendations were entered in your record

later, just as were the details of your office visit. This meant, of course, that your chart, along with the fifteen other charts, was removed from and replaced in the files. The additional time this required is not reflected in the 96 minutes I spent in the actual consultations. But it was spent, nevertheless, in what I consider a vital aspect of my service and obligation to you; the maintenance of a complete and accurate medical record.

Perhaps, with all the price listing that is being applied to professional medical services these days, many of us . . . patients as well as physicians, have forgotten that we do not *sell things*. We *render services* and, in order to be able to do so, we must be paid for the time spent in rendering those services. I believe the service I rendered you in our telephone conversation last month was worthy of a fee. Otherwise, I would not be practicing medicine. I also believe that you are willing to pay for my services. Otherwise, you would surely discharge me as your physician.

Two alternatives to charging for telephone consultations are available to me. One is to increase my fees to patients who come to my office in order to compensate me for the time I spend with those who only call. The other is to employ one of the various methods of making myself unavailable for direct telephone contact. Both methods I reject as unfair and deceptive.

I want to be as fair and honest with you as you have always been with me. And I hope you understand that charging for telephone consultations is not punitive, vindictive or mercenary. I hope you can agree that it is only fair and honest.—MRJ □



During September past, medical students returned to school and a new Freshman class was admitted to the University of Oklahoma School of Medicine. As one of my functions I was afforded the opportunity to assist in the approval

of loans to medical students and to interview and select other students interested in rural practice for the loans available through the Oklahoma State Medical Association's Foundation for Community Medical Care. This prompted a review of some of the changes which have occurred in the years since my medical school education. It would be presumptuous of me to attempt a study of any magnitude not being a medical educator in the academic sense. Neither is it my intention to be authoritative on this subject. Nevertheless I believe a point can be made in that as practicing physicians many of us have failed to remain alert and to keep in tune with times.

In the year 1910, the Flexner Report was published and this resulted in placing the responsibility for teaching medical students in the universities. Consequently, the teaching program became more scientifically oriented. I was a product of the Post-Flexner Era. Three years and preferably four years of pre-med and four years of medical courses were required. Where, originally, the completion of medical school and an M.D. degree were sufficient to begin practice, now graduates interested in general practice were spending another year in a rotating internship. The internship was followed by a residency program of two to five years duration when specialty training was the goal. Finally, a three-year residency in family practice was developed.

In the years following 1950 more emphasis was placed on research and on further increase in the scientific aspect of medical training. At the same time there developed

an awareness of the need to bring medical care to the people.

A few of the striking new developments might be mentioned. Whereas before, the clinical years were limited to the last two years, now early patient contact in the first year of medical school is emphasized. A reduction in the scheduled classroom time from up to forty-four hours down to twenty-five or thirty hours became common, at the expense of basic sciences and laboratory work. The hours which become available were devoted to more electives distributed throughout the entire curriculum. The fourth year might be dedicated almost entirely to electives. Community hospitals were utilized for clinical teaching. Preceptorships became popular.

A radical change was one which allowed a student to proceed through the curriculum at his own rate and the student who had already decided his "track" was permitted to go into a specialty following six years of training. Whereas training, all inclusive of college, medical school and postgraduate studies directed to a specialty, traditionally required twelve years, it may now be possible to accomplish this in nine years. Less importance and time is given to anatomy except for "some core instruction." Perhaps it may be well to note here that as of 1975 there will no longer be an internship program as we have known it in the past since it is to be absorbed by the residency of postgraduate training.

A report by the Carnegie Commission on Higher Education has shown by statistical projections that a modest increase in enrollment and accelerated curricula in the nation's medical schools will produce 15,000 more physicians by 1982.

The impact of socio-economic changes has in part been responsible for the progress described above. The high costs of medical care and the lack of health man-power will eventually result in even more dramatic progress. The physician of the future may become in part a manager or supervisor of allied health personnel which some believe may be the only answer to today's crisis in medicine.

It may be interesting to contrast the medical student of today with the one of thirty

(Continued on page 412)

Introduction To New Challenges In Renal Disease

On March 17, 1971, a one-day symposium was held at the University of Oklahoma Medical Center Faculty House on "New Challenges in Renal Disease." This was developed by members of the Departments of Medicine, Pediatrics, Urology, Pathology and the Office of Continuing Medical Education, University of Oklahoma Medical Center. It was co-sponsored by the Kidney Foundation of Oklahoma-Southern Kansas, Inc., the Association of the University of Oklahoma Medical Faculty and the Oklahoma Regional Medical Program.

Parallel sessions were held during the day, one oriented towards the physician and the other toward members of the allied health professions (nurses, dialysis technicians, dieticians, and social workers) working with patients having renal disease.

At the end of the afternoon, both groups heard Doctor Louis G. Welt give the First Annual Paul Kimmelstiel Lecture on "Management of Chronic Renal Disease." Doctor Welt is Professor and Chairman, Department of Medicine, University of North Carolina Medical Center, Chapel Hill, North Carolina and Immediate Past-President of the American Society of Nephrology. He is perhaps best known for the textbooks he has collaborated on or written. This was a scholarly, physiologically-oriented presentation which established a fine precedent for this annual lecture.

In the evening, a panel discussed problems related to finding financial assistance for the patient with chronic renal disease. Representatives of a number of organizations and agencies vitally interested in try-

ing to determine how best to meet the tremendous expenses required for dialysis and transplantation procedures presented their views and discussed their specific problems.

The next three issues of *The Journal of the Oklahoma State Medical Association* will contain the manuscripts presented at the physician's portion of this meeting. This portion has been divided into three panels, as follows:

Panel 1: Bacteriuria and Pyelonephritis—a Therapeutic Dilemma.

Doctor William L. Parry, Moderator.

Panel 2: Management of Chronic Glomerulonephritis.

Doctor William O. Smith, Moderator.

Panel 3: New Trends in the Provision of Dialysis Services.

Doctor Donald E. Wells, Moderator.

In each panel, four physicians from Oklahoma City, Tulsa and Wichita with interests in Nephrology or Urology present their views. Also presented and published with the third panel is a single presentation of some of the newly recognized, iatrogenic renal diseases (antibiotics, penthrane) which are now plaguing patients and physicians.

The program co-ordinators wish to publicly thank the participants in this program, especially those individuals in private practice, for their time and efforts in preparing these presentations and manuscripts. *L. O. Laughlin, M.D., R. D. Lindeman, M.D., Program Coordinators* □

Bacteriuria: Detection and Screening Techniques

JAMES E. WENZL, M.D.

Bacteriuria, the initial stage of overt urinary infection and pyelonephritis, can be effectively detected only by appropriate culture methods.

BACTERIURIA may be defined as the presence of non-contaminating bacteria in the bladder urine. To understand the spectrum of bacteriuria, one must first review its prevalence. The reported prevalences of bacteriuria in various populations and age groups are reviewed in Table 1.

Premature infants exhibit a rather high rate of urine bacterial colonization during their stay in the hospital nursery. In studies by Pendarvis and co-workers,^{1,2} 10 of 102 premature infants developed bacteriuria before discharge from the premature nursery. There was no sex predominance, and the majority were apparently asymptomatic. This high prevalence appears to be unique to premature newborn infants; bacteriuria in full-term infants is apparently very uncommon.

Male schoolchildren have a very low prevalence (0.03 percent) whereas female school-

children have a prevalence of 1.2 percent, regardless of socio-economic or other factors.^{3,4} These figures are important in devising urinary screening programs for schoolchildren; the low prevalence in males makes the use of bacteriuria detection techniques relatively useless, whereas the higher prevalence in females implies that these techniques are very worthwhile.

The prevalence of bacteriuria in pregnant women has been reported to vary from four to ten percent and probably varies somewhat with socio-economic status.⁵ For many years it was thought that bacteriuria was an associated and causal phenomenon in increased fetal wastage and higher rates of premature birth; more recent studies have indicated that bacteriuria and an increased rate of prematurity may co-exist, but are not a cause and effect phenomena.⁶ The prevalence of bacteriuria in women increases with increasing age and is reported to be 10 to 15 percent in women 60 years of age or greater.⁵ One might summarize by stating that bacteriuria is a disease of the very

Table 1
PREVALENCE OF BACTERIURIA IN VARIOUS AGE
AND POPULATION GROUPS

POPULATION	% WITH BACTERIURIA
Premature infants ^{1, 2}	10%
Schoolchildren ^{3, 4}	
Male	0.03%
Female	1.20%
Pregnant women ⁵	4-10%
Women > age 60 ⁵	10-15%

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young, the very old, and perhaps, the very pregnant.

Some might argue that the mere presence of bacteriuria cannot be equated with urinary tract infection or pyelonephritis. Indeed, there is epidemiologic evidence that the majority of cases of bacteriuria must subside spontaneously, since the prevalences of bacteriuria discovered on prospective studies are higher than the prevalences of clinical urinary tract infections or pyelonephritis. Yet, the common denominator of both urinary infections and pyelonephritis is bacteriuria, and at the present time we are unable to distinguish between those individuals with infected urine who have a "good" long term prognosis, and those who will eventually succumb to chronic urinary tract infection. Figure 1 illustrates the interrelationships of bacteriuria, urinary tract infection, and pyelonephritis.

The diagnosis of potential urinary tract infections is dependent upon the discovery of bacteriuria; other clinical findings are too insensitive to justify their usage. For example, "sterile" pyuria may occur in many situations, including severe dehydration, trauma to the urinary tract, chemical inflammation, following vaccines, or non-urinary tract infections (*i. e.*, gastroenteritis, upper respiratory tract infections) and in association with various renal disorders including glomerulonephritis, nephrosis and renal acidosis. Similarly, bacteriuria is not infrequently present without pyuria.

Comparison of bacteria visualized in clean-voided, freshly examined urine sediment versus colony counts from the same specimen, approaches a 92 percent correlation in our laboratory. Fifteen ml of urine is centrifuged in a clean test tube at 3,000 R.P.M. and immediately examined. The finding of greater than ten bacteria per high

Table 2
INSENSITIVE URINE SCREENING PROCEDURES
FOR BACTERIURIA

1. Griess nitrite test
2. Triphenyltetrazolium test
3. Urinary catalase
4. Steroid provocative test

power field is taken as evidence of infection. Others have reported lesser correlations.⁷ Although this is an extremely helpful office procedure, the time involved, and relative inaccuracy make this technique unsuitable for mass screening.

Attempts to simplify office or laboratory screening for bacteriuria have resulted in the evolution of various screening procedures (Table 2). These include the Griess nitrite test and the triphenyltetrazolium test, both of which are too unreliable to be of value. The urinary catalase and steroid provocative tests are relatively unreliable and also are involved, time-consuming studies. None of these are suitable for office or mass screening.⁷

The gram stain of uncentrifuged urine is a fairly reliable procedure for office or hospital use; its accuracy is partially dependent upon the time available for careful searching of the stained material and the experience of the microscopist. Positive results on gram stain will correlate with significant bacteriuria approximately 90 percent of the time. The greatest deterrent to this procedure is the time involved and lack of definitive identification of the organism seen.

The ideal screening procedure for bacteriuria should be simple and inexpensive, require a minimal amount of technician time, give definitive bacteriological identification, and not give false negative results. There are several commercially available culture techniques which at least partially satisfy

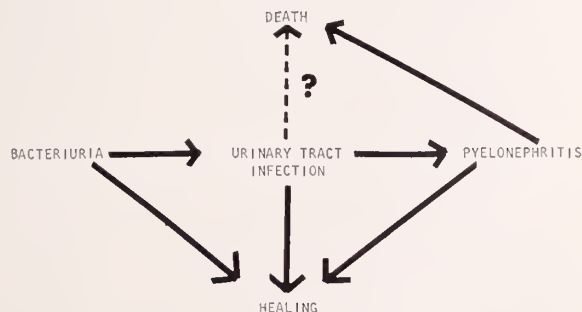


Figure 1. Bacteriuria in Childhood

Since his graduation from Creighton University School of Medicine in 1959, James E. Wenzl, M.D., has been certified by the American Board of Pediatrics. Presently he is Associate Professor of Pediatrics at the University of Oklahoma Medical Center. His medical affiliations include the Southern Society for Pediatric Research and the American and International Societies of Nephrology.

Table 3
COMMERCIALY AVAILABLE URINE CULTURE
SCREENING TECHNIQUES

Testuria† *
Uro-Checkit† **
UTI-tect ***
Bacta-Uria ****

†Doesn't identify organisms

- * Ayerst Laboratories, New York, New York 10017
** Bacti-Lab, Inc., Box 1179, Mountain View, California 94040
*** Scientific Products Division, Abbott Laboratories, North Chicago, Illinois
**** Laboratory Diagnostics Company, Inc., 1116 Walnut Street, Roselle, New Jersey 07203

these criteria (Table 3). These include the Testuria® and Uro-Checkit® methods which are reasonably accurate; neither allows definitive bacterial identification. The advantages of either of these systems are low cost and relatively small storage space requirements.

Two other systems (Bacta-Uria®, UTI-tect®) include the use of differential media in the initial inoculation. Both are relatively simple, require little ancillary apparatus, and are reliable. The cost of each is somewhat high for mass screening, but not excessive for office use. With mass usage, it is assumed that the cost will be reduced. The Bacta-Uria® dip slide is slightly more expensive, and requires a larger volume of urine than does the UTI-tect® kit. Both studies have an approximate 95 percent correlation with pour plate or calibrated loop streak plate cultures.^{7,8} We have had modest experience with the UTI-tect® test in both mass⁴ and office screening,⁸ and consider it quite satisfactory for either use. Its principal disadvantage is the relatively large refrigerator storage space requirement.

For hospital use, or for those physicians with access to microbiological laboratory facilities, the calibrated loop streak plate culture is both accurate and definitive. The calibrated platinum loops deliver either 0.01 or 0.001 ml of urine to the surface of the culture media, and when properly carried out, the results compare favorably with the more complex pour plate method. While ideal for use in hospital or clinical laboratories, the time, space, and microbiological background requirements tend to discourage use by the busy practitioner.

Any cultural technique is dependent upon urine collection procedures, patient variables, and laboratory experience. Interpretation of urine culture results must reflect knowledge of these variables.

Bacterial growth in urine properly collected by urethral catheter or suprapubic aspiration is significant, and does not require colony count quantitation. Urine cultures obtained by the clean-voided technique run the risk of contamination of sterile bladder urine by organisms from the periurethral and perineal structures during the collection process. Therefore, a distinction between true bacteriuria and contamination of the urine must be made. The bacterial count of a given urine specimen is useful in making this distinction. Generally speaking, urine cultures containing less than 1,000 colonies/ml are indicative of contamination, specimens containing 1,000 to 100,000 colonies/ml are suspicious of infection and should be repeated, and specimens containing more than 100,000 colonies/ml are indicative of infection.

Many errors or variables may influence the results of urine cultures collected by the "clean-catch" technique, and should be kept in mind by the physician. Some of the potential errors or variables are summarized in Table 4.

Certainly, inadequate cleansing of the perineum and insufficient attention to separation of the labia during voiding is the commonest cause of contamination of the clean voided urine specimen. Scrupulous attention to cleansing and proper positioning

Table 4
ERRORS OR VARIABLES CAUSING FALSE CULTURE RESULTS. (+) OR (—) REFER TO WHETHER ERROR CAUSES FALSE POSITIVE OR FALSE NEGATIVE RESULT.

MECHANICAL FACTORS	
Inadequate cleansing	(+)
Contamination with cleansing solution	(—)
Storage at room temperature	(+)
"Hot Loop"	(—)
Contaminated culture plate	(+)
MICROBIOLOGICAL FACTORS	
Anaerobic organisms	(—)
Acid fast organisms	(—)
Viral or fungal organisms	(—)
Antibacterial substance in urine	(—)
Inadequate incubation period	(—)
PATIENT FACTORS	
Obstructed ureter	(—)
Vaginal or foreskin washings	(+)

during voiding are necessary to obtain a proper specimen. It is also important to remember that the cleansing solution itself has strong antibacterial properties, and if a portion of this solution is spilled or allowed to drip from the perineum into the collection cup before or during voiding, it may inhibit the growth of organisms that were present in the urine at the time of voiding. This situation will give a false negative urine culture report; elimination of this error involves rinsing the cleansing solution off the perineum with sterile water or saline, or waiting a few moments for the excess to drip off.

After collection of the urine specimen in a sterile container, it is important that the urine be immediately inoculated on the culture plate to avoid multiplication and overgrowth of a small number of contaminating bacteria. If the inoculation cannot be achieved within a half hour or so after voiding, it is best to store the urine at refrigerator temperatures until the inoculation on proper culture media can be achieved. The "hot loop" error occurs in association with rushed laboratory or medical personnel. If there is only a small volume of urine in the collection container, it is very important that the calibrated platinum loop which is sterilized by flaming over a Bunsen burner be allowed to cool prior to immersion in the urine. If the glowing red loop is plunged into a small amount of urine, the immediate result is boiling of the urine, with destruction of any bacteria therein. Waiting a few seconds for the loop to cool will obviate this error. Contaminated culture plates occur upon occasion; these can usually be detected by the presence of bacterial growth on one culture medium but not on the other, simultaneously cultured plates.

As far as microbiological factors, it is important to remember that standard laboratory culture techniques do not test for the presence of anaerobic organisms, acid fast organisms, viral organisms or fungi. If there is any possibility of infection due to one of these agents, a specific request for the appropriate culture media is necessary to insure proper microbiological technique. Similarly, it is important to remember that patients frequently have "left over" antibiotics or antibacterial substances in their

medicine cabinets. A few tablets of antibiotics or antibacterials taken without the attending physician's knowledge may temporarily suppress growth of organisms in the urine causing a false negative culture; generally the patient does not have a supply of his self-administered medication large enough to eliminate the organisms.

It is important to be certain that all urine cultures are incubated for a minimum of 48 hours; certain organisms do not grow well in less than 24 hours and may not be visible on the culture plates if they are interpreted and discarded daily.

Finally, we must remember that the ureter may be totally obstructed by a renal calculus, tumor, etc. so that infected urine does not enter the bladder. However a fulminating pyelonephritis may be present above the site of obstruction. Also, the proper preparation and cleansing of newborn female or male babies is especially difficult. Sterile plastic bag collections from these infants frequently are more representative of vaginal or foreskin (if uncircumcised) flora than of the bladder urine. In this age group, it is generally preferable to perform suprapubic aspirations of the bladder if a urine culture is desirable.

While this list of potential errors seems formidable, scrupulous attention to good nursing and microbiological fundamentals will allow a proper diagnostic study to be accomplished.

One could summarize by saying that detection of bacteria in the urine is usually dependent upon the cultural identification of micro-organisms in the urine in significant numbers. For mass screening or the physician's office, a self-contained culture system such as the UTI-tect® kit or Bacta-Uria® test slide seem preferable. For hospital or clinical laboratory use, the calibrated loop streak plate culture is preferable. Whereas the clean-voided collection technique is generally satisfactory if properly applied, certain situations will necessitate the collection of urine by urethral catheterization or suprapubic aspiration. □

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UNITED MEDICAL LABORATORIES CYTOLOGY TESTS NOT COMPENSABLE

Neither Medicare nor Medicaid will pay for cytological examinations performed by the United Medical Laboratories, Inc. of Portland, Oregon, as of September 1st. Effective that date, UML lost its certification for cytological examinations.

Medicare payments and the federal participation in Medicaid payments was withdrawn by the Social Security Administration after the action was taken. Withdrawing of the federal participation in Medicaid means that the Department of Institutions, Social and Rehabilitative Services (Department of Public Welfare) will be unable to pay for such examinations.

The loss of certification was based on the laboratory's failure to meet standards which require that a laboratory have appropriate supervision and sufficient number of properly qualified technical personnel to perform laboratory tests requiring independent judgement, in this case, the reading and reporting of results of cytology slides, such as pap smears. □

Vesicoureteral Reflux and Urinary Tract Infection

DONALD B. HALVERSTADT, M.D.

Vesicoureteral reflux is a frequent finding in patients with recurrent urinary tract infection. Many of these patients, however, do not require reconstructive surgery. Knowledge of the pathophysiology of reflux, as well as available radiographic and endoscopic methods for its evaluation, will allow for accurate definition of those patients in whom it is a significant surgical problem.

INTRODUCTION

VESICoureTERAL REFLUX refers to the abnormal regurgitation of urine from the bladder into the ureter or kidney pelvis. Under normal circumstances the ureterovesical valve allows urine from the ureter to enter the bladder, but prevents urine in the bladder from flowing back into the ureter. In this way, the kidney is protected from pressure changes in the bladder and from contamination of infected bladder

urine. When the vesicoureteral valve becomes incompetent for any reason, bladder urine regurgitates into the ureter, which may result in hydro-ureter, hydronephrosis, and pyelonephritis.

Vesicoureteral reflux occurs in approximately two patients per 1,000 general population. Approximately 30 percent of females will demonstrate reflux on the initial voiding cystogram taken to evaluate recurrent urinary tract infections.

ANATOMY OF THE URETEROVESICAL JUNCTION

The ureterovesical valve mechanism is composed of three parts: (1) the ureteral or mesodermal component; (2) the vesical or endodermal component; and (3) Waldeyer's sheath.

The mesodermal component of the valve begins in the kidney where the nephron meets the collecting tubule. This component includes the collecting tubule, calyceal structures, renal pelvis, extravesical ureter, intravesical ureter, ureteral orifice, the superficial portion of the trigone, and its insertion into the proximal urethra, or crista urethralis. Embryologically it derives from the wolffian duct. It is innervated principally by the sympathetic nervous system, where-

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Reflux / HALVERSTADT

as innervation to and from the bladder wall proper is primarily parasympathetic. The ureter outside the bladder has three muscle coats; an outer longitudinal layer, a middle circular layer, and an inner longitudinal layer. The middle circular layer is most active in peristalsis. The circular layer is absent from the intravesical segment of ureter and no peristaltic activity occurs in this segment, urine being conveyed through this area passively. The longitudinal smooth muscle coats form the intravesical ureter, splitting at the ureteral hiatus to allow for an opening in the ureter, with the inner longitudinal portion further extending in a caudad direction as the superficial portion of the trigone, with extension through the bladder neck, and insertion into the proximal urethra. The outer longitudinal coat of the intravesical ureter becomes continuous with the deep portion of the trigone and is anchored at the bladder neck.

The endodermal component of the ureterovesical valve mechanism is the bladder wall proper, with its ureteral hiatus, through which the ureter passes. It is innervated principally by the parasympathetic nervous system.

The third component, or Waldeyer's sheath, is a collagenous mesodermal connective tissue structure with some smooth muscle, which joins the ureteral and vesical components. It surrounds the lower two or three cm. of the extravesical ureter, inserting into the bladder wall at the ureteral hiatus and

continuing through the hiatus to become continuous with the deep portion of the trigone, with insertion into the bladder neck and proximal urethra.

The three components mentioned above form a ureterovesical valve mechanism which presents inside the bladder as a submucosal ureteral tunnel, of variable length depending on the age of the patient, which acts as a flap valve to prevent regurgitation of urine from the bladder into the ureter.

PHYSIOLOGY OF THE URETEROVESICAL VALVE

The ureter is not fixed at the ureteral hiatus but is free to move back and forth within it. This movement affects the distance between the ureteral hiatus in the bladder wall in the ureteral orifice proper, thus determining the length of the intravesical ureter, or as it is commonly called, the ureteral tunnel.

Electrical stimulation of the trigone, or physiologic discharge of the sympathetic nervous supply to the trigone, causes the ureteral orifice to move in caudad direction toward the bladder neck, shortening the length of the trigone, and pulling the ureteral orifice toward the bladder neck. This movement increases the length of the intravesical ureter. This change in length is accompanied by increase in bladder wall tone and intravesical pressure, causing the walls of the intravesical ureter to coapt in tighter position during voiding, effectively preventing regurgitation of urine into the ureter.

If the lateral border of the trigone is cut, the ureteral orifice is released, allowing it to retract in cephalolateral direction, with immediate development of vesicoureteral reflux. Reflux can be stopped by uniting the cut ends of the trigone, which brings the ureteral orifice back into normal position.

During the normal voiding act, the trigone contracts, increasing the length of the intravesical ureter, while increased intravesical pressure coapts the walls of the intravesical ureter, preventing regurgitation of urine.

FACTORS CAUSING REFLUX

The most common factor related to vesi-

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coureteral reflux is the phenomenon of *maturation*. At birth, the length of the intravesical ureter is approximately five millimeters. By age 10 to 12 years, it reaches the adult length of approximately 1.3 to 1.5 centimeters. In general terms, the longer the intravesical ureter or ureteral tunnel, the less apt reflux is to occur. Therefore the incidence of reflux is relatively higher in children than it is in adults. If the muscle comprising the trigone is weak, the ureteral orifice will reside in abnormal cephalad and lateral position, with shorter ureteral tunnel, increasing the likelihood of regurgitation. Reflux in this situation is referred to as *primary reflux*.

Reflux may also occur secondary to dilatation of the ureteral hiatus and destruction of the valve mechanism, secondary to *obstruction* in the lower urinary tract. Such problems as benign prostatic hyperplasia, posterior urethral valves, urethral strictures, or distal urethral obstruction in female children may produce this type of reflux.

Reflux may also occur secondary to *neurogenic dysfunction* of the bladder. Traumatic injury to the spinal cord or the cauda equina, birth defects (such as meningocele), multiple sclerosis, or tabes dorsalis may produce loss of normal neural control with resultant spastic or flaccid changes in the bladder. These changes may allow destruction of the ureterovesical valve, dilatation of the ureteral hiatus and subsequent ureteral reflux.

Reflux may also occur as the result of *edema* or *inflammation*. Presence of edema or inflammation within the bladder may distort normal relationships of the valve, or render the tissues stiff so that reflux may occur. When inflammation regresses, the reflux may disappear.

Reflux may also be *iatrogenic* in nature. Any surgical procedure that shortens the intravesical ureter may result in reflux. Examples include ureteral meatotomy for ureterocele, transurethral resection of the bladder or prostate with injury to the lower ureter, and poor results with attempted ureteral re-implantation.

Congenital anomalies of the ureter may also be associated with vesicoureteral reflux. Examples include the ectopic ureter and duplicated ureters. In ureteral duplication,

the upper orifice is incompetent because its intravesical segment is abnormally short.

From the above discussion, one can define an etiologic classification of vesicoureteral reflux, which includes (1) primary, (2) obstructive, (3) neurogenic, (4) inflammatory, (5) iatrogenic, (6) ureteral anomalies.

RELATIONSHIP OF REFLUX TO HYDRO-URETER AND HYDRONEPHROSIS

Reflux may be associated with hydro-ureter and hydronephrosis. As mentioned previously, the walls of the intravesical ureter contain no circular smooth muscle fibers and therefore do not convey peristalsis. Normally the intravesical ureter is not obstructive, but if it is not well anchored to the trigone, it will assume an extravesical position and may become obstructive by preventing peristaltic waves from freely sweeping urine into the bladder. This segment has a fixed emptying capacity, and if the ureter is compelled to expel an abnormally large volume of urine, as would occur with reflux, the emptying capacity of the segment may be exceeded, ultimately resulting in hydro-ureter and possibly hydronephrosis.

MECHANISM BY WHICH REFLUX PERPETUATES INFECTION

A normal, unobstructed bladder rids itself of bacteria by two mechanisms: (1) Mechanical emptying of the bladder which eliminates most, if not all the bacteria and (2) the intrinsic defense mechanism of the vesical mucosa, which eradicates the remaining bacteria in whatever film of urine is left on the bladder wall.

Infection may perpetuate itself in an unobstructed lower urinary tract in the presence of vesicoureteral reflux. Although the bladder empties completely, it will be partially refilled by infected urine which has regurgitated into the ureter during bladder emptying, allowing for residual urine volume in the bladder, exceeding the defense mechanisms of the bladder wall and allowing for the perpetuation of infection by multiplication of bacteria in the residual urine volume. Very small residual urine volumes, in the range of five to ten cc., may be important in this regard.

Reflux / HALVERSTADT

RADIOGRAPHIC FINDINGS

Vesicoureteral reflux should be suspected if the intravenous urogram shows any of the following changes: (1) persistently dilated lower ureter, (2) segmental areas of persistent dilatation of the ureter, (3) visualization of the ureter in its entire length, (4) presence of hydro-ureteronephrosis, (5) indication of atrophic pyelonephritis, caliectasis, or renal cortical thinning. Reflux may be diagnosed by standard techniques of still cystography or voiding cystography.

IMPORTANT CLINICAL FACTORS

Vesicoureteral reflux should be suspected in all cases of lower urinary tract obstruction, neurogenic bladder disease and all cases of recurrent urinary tract infection at any age. In female children with recurrent urinary tract infection, reflux will be demonstrated in approximately 30 percent of patients during the initial voiding cystourethrogram.

CLINICAL APPROACH TO VESICoureTERAL REFLUX

As mentioned earlier, the length of the intravesical ureter is the key factor in the management of the patient with reflux. In the usual clinical situation, evaluation of the urinary tract is undertaken because of one or more urinary tract infections, recurrent flank pain, unexplained abdominal complaints, difficult voiding, urinary incontinence, or enuresis. Urinalysis and urine cultures studies are completed, significant infection is treated, and intravenous urogram and voiding cystogram are obtained. Vesicoureteral reflux is demonstrated.

From a urologic standpoint, endoscopic evaluation of the patient in question is indicated, after completion of the above studies. Careful calibration of the urethra with instruments called bougies is accomplished, to document any area of relative or absolute obstruction. The urethra is then carefully inspected for evidence of meatal obstruction,

stricture, urethral valves, or bladder neck obstruction. The trigone of the bladder is carefully examined to document degree of development. The ureteral orifices are visualized and notation made as to normal insertion into the trigone or abnormal cephalolateral position. Most important, the length of the intravesical ureter or ureteral tunnel is assayed by means of measurement of length with a ureteral catheter. This procedure allows for exact demonstration of ureteral tunnel length. In general terms, the longer the segment the less likely is reflux to occur. In most patients (except infants) a ureteral tunnel of one cm. length is the shortest tunnel which will prevent reflux.

If *obstructive disease* is found in the distal urinary tract, the initial step is surgical relief of the problem. This may be done by plastic revision of the bladder neck, prostatectomy, resection of urethral valves, repair of urethral stricture or dilatation or internal urethrotomy for distal urethral obstruction.

If *neurogenic bladder dysfunction* is suspected, completeness of bladder emptying and cystometrographic review of volume pressure relationship is indicated. If spastic dysfunction is found, treatment with Banthine® or some other parasympatholytic drug may be helpful. Procedures to reduce peripheral resistance to voiding may also be helpful in situations where spasticity of the urinary sphincters accompanies the bladder dysfunction. If flaccid neurogenic bladder dysfunction is found, use of manual pressure or the Credè maneuver, or the use of a parasympathomimetic agent such as Urecholine® may be effective. Ureteral re-implantation is not always effective in neurogenic bladder dysfunction and should be carefully considered before the decision is made.

When vesicoureteral reflux has been massive, secondary to long standing distal obstruction and severe injury to functioning kidney parenchyma is apparent, urinary diversion may be necessary. Likewise, in the patient with neurogenic bladder dysfunction, if infection cannot be controlled, or incontinence becomes a major problem, or if injury to the upper urinary tract is apparent, urinary diversion may be necessary. It should be emphasized, however, that only a very small number of patients belong to this category.

PRIMARY REFLUX

Having ruled out or dealt with problems of distal urinary tract obstruction or neurogenic bladder dysfunction, one is left with a large group of patients, principally children, in which reflux is found without associated abnormality save for the frequent finding of relative urethral obstruction in the female child. Reflux in these children generally may be divided into three categories.

In the *first group*, reflux of a wispy nature into the lower ureter will be demonstrated, usually only under high pressure with voiding or in the presence of active urinary tract infection. If ureteral tone is good and peristaltic activity is normal and the ureter is undilated, reflux may disappear with relief of distal obstruction and long term antibacterial therapy. From an anatomic standpoint, this situation is usually associated with a marginally competent or normal intravesical ureter and reasonable development of the trigone. In this group of children, re-implantation of the ureters is rarely necessary.

The *second group* is one in which a moderate degree of reflux is demonstrated. In this situation, regurgitation may occur at low pressure, may fill the entire ureter and renal pelvis, but the ureter is not significantly dilated and peristaltic activity is good. From an anatomic standpoint, these patients usually show a marginally competent ureterovesical valve or a relatively poorly developed valve, in association with fair or poor development of the trigone. In this situation, any distal obstruction is relieved, the child is placed on long term antibacterial therapy and, if infection can be controlled, re-implantation is not performed unless evidence of mechanical damage to the kidneys or pyelonephritic change is apparent. Less than half of these children will ultimately require re-implantation.

The *third group* is one in which massive reflux is demonstrated. In this situation, intravenous urogram and voiding cystogram show a distended ureter and distended renal pelvis with caliectasis, poor peristaltic tone in the ureter, often with tortuosity and lengthening of the ureter being apparent. From an anatomical standpoint, there is

poor or no development of the trigone, abnormal location of the ureteral orifice and essentially no intravesical ureter. In these patients, there is no hope for maturation of the tunnel mechanism. Reflux will not disappear with relief of distal obstruction, and infection will persist in most cases. Mechanical or pyelonephritic damage to the kidneys occurs frequently. Ureteral re-implantation is indicated as a primary procedure in these patients if bladder tone is satisfactory and one can demonstrate some evidence of peristaltic activity in the ureters.

SUMMARY OF APPROACH

A voiding cystogram is obtained to provide an indication of severity of reflux and an estimate of peristaltic activity in the upper urinary tract. Urethral calibration and endoscopic evaluation is performed to document presence or absence of distal urinary tract obstruction, anatomical development of the trigone, position of ureteral orifice and length of intravesical ureteral tunnel. Any distal obstruction (most frequently urethral stenosis in the female child) is relieved. The patient is then placed on long term antibacterial therapy, normally three to six months in length. A follow-up intravenous urogram and voiding cystogram are obtained and decision then made relative to the need for re-implantation.

Absolute indications for ureteral re-implantation include (1) persistent infection with systemic toxicity after relief of distal obstruction, (2) mechanical damage to the pelvo-calyceal structures of the kidneys, secondary to reflux, (3) evidence of pyelonephritic change, (4) evidence of declining renal function.

It should be emphasized that only a small portion of patients with vesicoureteral reflux ultimately require re-implantation. Of the 30 percent of patients demonstrating reflux at first cystogram in the evaluation of recurrent urinary tract infection, more than half will show wispy reflux and ultimately almost none of these patients require re-implantation. Approximately one-third of this group will show moderate reflux, with marginal or poor valve development. After relief of distal obstruction and long term antibacterial therapy, less than half of this

Reflux / HALVERSTADT

group will require re-implantation. Perhaps ten percent of the patients will demonstrate massive reflux and total lack of valve development, usually in association with upper tract damage. All of these patients will require re-implantation, or in some cases urinary diversion.

SURGICAL CONSIDERATIONS

Several techniques are available for ureteral re-implantation. All approaches have in common the development of a one and one-half to two and one-half cm. submucosal, intravesical ureteral valve mechanism with anchoring of the ureter into the trigone. In the hands of an experienced urologic surgeon, one may expect resolution of reflux after ureteral re-implantation in 95 to 99 percent of the cases. In the situation of re-

current episodes of pyelonephritis, relief of such attacks will be obtained in approximately 95 percent of patients following ureteral re-implantation.

SUMMARY

The foregoing comments are presented by way of reviewing the manner in which the practicing urologist views vesicoureteral reflux at the present time. With a rational, step-wise approach to include radiographic and endoscopic evaluation, relief of obstructive processes, and long term antibacterial therapy, one can more accurately define that group of patients in which vesicoureteral reflux is a significant surgical problem and reduce to a minimum the number of patients in whom reconstructive ureteral surgery is necessary. □

800 N.E. 13th Street, Oklahoma City, Oklahoma 73104

PRESIDENT'S PAGE—

(Continued from page 400)

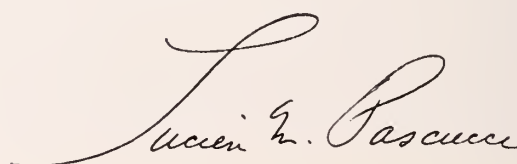
or forty years ago. Today's medical student is apt to be married and have a family started. It is almost impossible for him to earn his entire way through medical school; but fortunately there are all varieties of scholarships, loans (private, governmental and bank), grants, etc. Whereas the medical student of years ago came mainly from affluent families, today there is considerable opportunity for the student of middle class families and occasionally for the disadvantaged. The interns and residents income per month is now measured in the hundreds and thousands of dollars; during my 20 months as an intern, my financial remuneration was nil and my income as a resident in Radiology was \$40.00 a month for three years. The intern and resident can now spend more time with his family since his working hours have also been decreased.

Most medical students of today are a new breed. Witness the formation of the Stu-

dent's American Medical Association (S.A.M.A.). Medical students are now being considered for membership in the American Medical Association. They serve on the Admissions Committee of the Medical School in Oklahoma. Whether this is good or bad only time will determine.

One must certainly include our medical educators who have played the biggest part in the transition which is evident. Considerable credit is due them for they have recognized the trends and are sincerely and effectively training students to become better practitioners of medicine oriented toward the care of and service to the patient. By the same token we as practitioners should be available at all times for any assistance which may be requested or indicated. □

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The Treatment of Urinary Tract Infections in Children

CHARLES R. BLOCK, M.D.

*A common clinical problem
which takes more than a common
mode of treatment.*

THE FIRST THING I want to do is take exception to the title of the panel, "Bacteriuria and Pyelonephritis—A Therapeutic Dilemma." I am going to talk about the treatment of urinary tract infection. The word pyelonephritis is a pathological and anatomical diagnosis and rarely has a place in clinical discussion by the average doctor. The only absolute way I know of clinically diagnosing pyelonephritis is to find a white cell cast containing phagocytized and unphagocytized bacteria. I have seen only one such sediment in my entire life and am unable to find in the medical literature a single photomicrograph of such a cast.

For purposes of discussion then, a urinary tract infection may be defined as the presence of bacteria anywhere between the vesical outlet and the kidney. Usually, but not always, organisms are present in concentrations of greater than 10^5 per ml of urine. Exceptions to this rule may occur with gram positive organisms and obviously with tubercule organisms or Mycoplasma organ-

isms. It seems logical to me that any discussion of treatment should include some comments about prevention. If we can diagnose obstructive or other anatomical urinary tract abnormalities before they become clinically evident, we may be able to prevent at least the serious consequences of recurrent urinary tract infections.

We know that urinary tract abnormalities are frequent in the following clinical settings: (1) single umbilical artery, (2) obvious external abnormality of the genitourinary tract, (3) abdominal wall defects, (4) certain metabolic defects, (5) in association with other major and minor congenital defects; *i.e.* meningomyelocele, congenital heart disease, low-set ears, hemiatrophy, etc., (6) patients with immunological and cellular mediated abnormalities, (7) family history of recurrent urinary tract infection or disease, (8) trauma—*i.e.* burns, and (9) instrumentation. Early diagnostic studies of such patients to establish the presence or absence of urinary tract infection or abnormality is necessary. This includes radiographic and bacteriological studies. These will be more helpful than renal function studies.

There are some less well known and not as well substantiated practices that we doctors should support which will possibly prevent some urinary tract infections. These include teaching respect for cleansing the

Infections / BLOCK

perineal and vaginal area and advising parents to encourage healthy voiding patterns as proposed by Lapidès.¹ Early care and prevention of meatal ulcers in boys and the prevention of ammoniacal dermatitis in both boys and girls may be useful. Frank discussions during sex education about "honeymoon cystitis" and the need to drain the bladder after sexual relations, etc. These are just a few of the hypothetical but possible avenues to consider in the prevention of urinary tract infections. I could also discuss methods to maintain the best natural defenses against infection. These include considerations of optimal urine pH, osmolality, ammonia concentration, the role of complement and dietary considerations. However, most of these considerations are very theoretical and are of little practical value.

In order to treat a urinary tract infection we must first be certain of our diagnosis. As previously discussed, the only way to be certain that infection is present is to do quantitative urine cultures. Pyuria is not diagnostic! Renal function studies are not diagnostic. Smears of the unspun sediment are useful, but not diagnostic. The practice of obtaining duplicate specimens should be encouraged in children because of the difficulty in obtaining accurate specimens. In infants, the suprapubic aspiration may be the most reliable and easiest way to obtain an accurate specimen. In the toddler and older child, the midstream clean-catch method usually produces reliable results. Naturally, anytime the clinical situation requires further delineation, urethral catheterization can be performed.

The most common pathogens are the gram negative inhabitants of the gastrointestinal tract. Such organisms naturally limit our selection of antimicrobial agents and this, along with the peculiarities of renal physiology and drug pharmacology, imposes further drug selection limitations.

In general, acute infections with clinical evidence of toxicity require drugs that produce both high serum and urinary antibiotic concentrations. In patients with chronic urinary tract infections (with little or no toxicity) and in the asymptomatic bacteriuric patient, drugs which achieve only high

urinary levels may be adequate.

It is desirable to know the drug sensitivity of the organism cultured, but this is not always necessary—especially in the treatment of an acutely infected or the initial asymptomatic bacteriuric patient. Clinical response and repeat cultures can be used. I do feel that drug sensitivity patterns are needed in all patients with chronic or recurrent urinary tract infections.

In acute infections of children older than the neonatal period, I support the use of sulfonamides. The more soluble forms are the agents of choice and the long acting forms are mentioned only to be condemned because of their toxicity. Usually there is a prompt clinical response within 48 hours after institution of therapy. More patients respond to sulfonamides than to ampicillin. I usually continue therapy for three weeks and then repeat the urine culture; if it is sterile, additional cultures are taken at bi-monthly intervals for the next six months. I usually wait one month from onset of therapy before doing radiographic studies—to allow occasional non-specific changes (related to edema) to regress. If an acute infection recurs during therapy or recurrent bacteriuria is found, then a repeat culture and sensitivity should be obtained immediately, urgent radiographic studies are done and selection of drugs made on the basis of sensitivity patterns. Initial therapy may be followed by full dosage of either sulfonamides or nitrofurantoin suppressive therapy for six months.

Chronic infections generally are treated as recurrent urinary tract infections except that suppressive therapy must be continued longer—two years or more. Some people, myself included, do not feel all such patients need full dosages of suppressive medication. I have several patients who maintain a sterile urine taking nitrofurantoin as a single dosage at bed time. Only clinical response can determine needed dosage and frequency of administration.

I would like to make a brief comment about bacteriuria in neonates. This finding is equivalent to sepsis until proven otherwise and should be treated with bactericidal drugs in a hospital setting.

What drugs are most useful in the treatment of urinary tract infections? As stated,

the soluble sulfonamides form the backbone of our armamentarium. The disadvantages of sulfonamides include occasional allergic reactions, contraindications in neonates and occasional rapid emergence in resistant organisms.

Ampicillin, which is enjoying much popularity, is virtually non-toxic. In my experience it is effective against fewer strains of *E. coli* than sulfonamides and is relatively inefficient against *Klebsiella-Aerobacter*. It is relatively effective against *Proteus mirabilis*. The two major drawbacks to ampicillin are: (1) The drug is expensive and (2) it produces a rash in up to 15 percent of children (however, this isn't necessarily a contraindication to its use).

Kanamycin is effective against nearly all urinary pathogens except *Pseudomonas*. It must be given parenterally. It is nephrotoxic and in patients with decreased urinary function its toxicity is increased. In such clinical settings, I suggest reducing the dose to 7.5 to 10 mg/kg/day and use it for a limited time, preferably less than ten days. This drug is preferable to streptomycin.

Penicillin G is effective against many strains of enterococci. To achieve the proper blood or urine levels it usually needs to be given in large parenteral doses. It can be used effectively in patients with limited renal function who tend to get higher levels with moderate doses of the drug either parenterally or orally. For this reason it can sometimes be used with good response in neonates. Always use the aqueous form for a neonate—procaine penicillin can cause toxicity in small infants with physiologically decreased glomerular filtration rate.

Polymyxin B and colistin are frequently disappointing in spite of good sensitivity patterns, because urinary levels achieved are quite low. Both drugs are nephrotoxic and require careful monitoring.

Chloramphenicol rarely may be useful. Its use is limited because little *active* chloramphenicol is excreted in the urine, and its toxicities are well known and feared.

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Tetracycline produces good serum and urinary levels. Unfortunately the drug has multiple side effects (tooth discoloration, photosensitivity, etc.) which discourage its use by pediatricians. The rapid emergence of resistant organisms makes its clinical usefulness even more limited.

Nitrofurantoin produces low serum, but high urine levels. Resistance is slow to develop. The reason for this may be related to its poor serum and tissue levels, which do not alter the sensitivity of the bowel flora. Gastritis, paresthesias and chemical pneumonias are not unusual side effects.

Acidification is a frequent adjunct to nitrofurantoin therapy. However, acidification of urine reduces the effect of kanamycin and streptomycin.

Mandelamine is effective only in an acid urine. It apparently has no effect on renal parenchymal pathological processes and is of limited usefulness for this reason.

Cephalothin drugs may occasionally be useful. They are not nephrotoxic and are most useful in patients with penicillin allergy.

Carbenicillin—a relatively new antibiotic—is highly active in vitro against *Pseudomonas*. I feel at present it should be used only for the treatment of this organism. It is excreted in the urine and is nontoxic to the kidney. The dosage schedule in children is not well known. The current expense of the drug is prohibitive. It must be administered parenterally and like all drugs given parenterally, attention must be paid to the compatibility with fluids, other drugs, and natural rate of decay.

Now, before I close, what is the therapeutic dilemma? It is how effective are we in changing the natural course of the illness? Does therapy prevent end-stage kidneys, hypertension, fetal wastage, etc? Unfortunately, I cannot answer these questions. I can only say that as a practicing physician, I feel it is my duty to treat illness the best I can, to educate my patients to the chronic nature of their problem and to await and learn what data my academic colleagues can give me to further help my patients. □

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The Wichita Clinic, 3244 East Douglas, Wichita, Kansas 67208

Pyelonephritis and Bacteriuria

Therapy in Adults

ANTHONY W. CZERWINSKI, M.D.

This article provides an overview of some of the problems concerned with the treatment of pyelonephritis. Specifically, the article defines certain high risk groups, who should be treated, how treatment should be planned, what are realistic goals of therapy, why treatment fails and how we can prevent urinary tract infections.

THE TITLE of this section, "Pyelonephritis and Bacteriuria—A Therapeutic Dilemma," is particularly important as it indicates the problem. The problem is not that bacteriuria may cause pyelonephritis, but rather who should be treated, how should they be treated and for how long should such patients be treated? This dilemma has arisen because long term follow up often demonstrates the ineffectiveness of present therapeutic maneuvers. Secondly, treatment in itself is associated with an appreciable morbidity and an occasional mortality. Anyone who disbelieves this should read the paper by Koch-Weser, *et al.*,¹ concerning the adverse effects of a single drug—colymycin. This study demonstrated that adverse renal

reactions occurred in 20.2 percent of persons taking colymycin and acute tubular necrosis occurred in 1.9 percent of patients. Finally, the dilemma has arisen because treatment is no longer inexpensive.

This discussion will attempt to define certain aspects concerned with the recognition and therapy of urinary tract infections. Specifically, we will attempt to define who is particularly at risk, who should be treated, what are the goals of treatment, how should patients be treated, why treatment fails and how we can prevent urinary tract infections.

As it takes two to quarrel, so it also takes two to make a disease; the microbe and the host. Unfortunately, part of our present therapeutic dilemma occurs because of a preoccupation with bacterial removal and because insufficient information is available concerning host factors which normally prevent urinary tract infections. Specifically, some of the host factors identifying patients at risk are as follows:

- 1) Women are much more at risk than men. In most instances pyelonephritis arises secondary to an infection of the lower urinary tract. In women the incidence of infection is stated to be the result of a short urethra. However, another factor may be the reversible trauma to the urethra and bladder outlet, as a result of sexual intercourse and childbirth, resulting in obstruction of urine flow and possible impairment of local defenses. Particularly pertinent here is the report of Fair

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and Stamey² about a bactericidal substance in prostatic secretions of men. The absence of this substance in women may in part explain their enhanced susceptibility to infection.

- 2) Obstructive uropathy is by far the most commonly mentioned risk factor in any discussion of pyelonephritis. This pre-eminence has resulted from studies which have demonstrated that obstruction increases the likelihood of infection and the relief of obstruction decreases the frequency of infection. Furthermore, the treatment of obstructive pyelonephritis is quite difficult and often unsuccessful.
- 3) Instrumentation and urethral catheterization places any subject at risk to urinary tract infection and the risk of significant bacteriuria after a single catheterization is approximately one percent.³ This incidence of significant bacteriuria increases to 98 percent if an indwelling catheter remains in place for approximately 96 hours.
- 4) Finally there are multiple host factors which may predispose any patient to urinary tract infection and these include such things as diabetes mellitus, renal lithiasis, persistent hypokalemia and hypertension. The latter may increase the risk of pyelonephritis because of renal ischemia.

Who should be treated? At first glance, this would seem to be an easy question to answer . . . anyone with urinary tract infection. However, since treatment is often ineffective, I prefer the more pragmatic approach of treating all patients with symptomatic urinary tract infections and treating all patients with asymptomatic bacteriuria at least once, since approximately 30 percent of these patients will develop a symptomatic urinary tract infection. Finally, I treat all patients with bacteriuria and deteriorating renal function in whom infection may be a cause of the functional deterioration. To further clarify these statements, I would not, at present recommend repeated treatment of persistent asymptomatic bacteriuria in persons not demonstrating a deterioration of renal function.

I will only make a few comments on the detection of bacteriuria. At this time, in an

office practice, I would not advocate that every patient seen should have a pre-treatment urine culture. However, I would recommend that quantitative urine cultures be done in all patients two weeks post-treatment, especially since inexpensive quantitative procedures are now becoming available (UTI-tect,[®] Courtland Scientific Products Division, Abbott Laboratories). In addition, quantitative urine cultures and sensitivities should be done in patients not responding to treatment and in patients having repeated urinary tract infections so as to guide further treatment. Finally, I pursue a complete medical and urological study in all males, regardless of age, who present with urinary tract infection or bacteriuria, and in all females with persistent bacteriuria or more than two acute simple urinary tract infections in a given year.

What are the goals of therapy? Obviously one of the goals is to control symptoms; this after all is why most patients come to your office. Unfortunately, the correlation between symptomatic relief and cure is not invariable and indeed 50 percent of patients get relief from symptoms despite the treatment.⁴ The next goal would be to clear the bacteriuria. Since bacteria are the microbes causing the disease, the obvious goal of treatment is to eradicate bacteriuria. As mentioned previously, clearing of symptoms does not equate with clearing of bacteriuria. Indeed this is the problem, since 30 to 70 percent of adult patients with repeated episodes of pyelonephritis or persistent bacteriuria do not have eradication of the bacteria after antimicrobial treatment.⁵ Again one of the goals of treatment would seem to be the prevention of renal damage, but again, the evidence here is sketchy. Pathological studies in animals⁶ and longevity studies in children⁷ have demonstrated that many infections are self-limited. Treatment, once the infection is established, while preventing septicemia does not necessarily prevent renal pathologic change.

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How should patients be treated? First let me discuss the antimicrobials. At present, there is much discussion concerning whether the blood or urine concentration of antimicrobials is more important in the treatment of pyelonephritis, a disease which predominantly involves the renal medulla. The heart of this discussion concerns whether unbound drug in the tubular lumen or unbound drug in the vascular space determines the renal medullary drug concentration and this has not been answered. Whatever the explanation, one aspect of treatment must be directed toward stopping ascending reinfection and to this end, sterilization of the efferent urinary passages is indicated. Equally obvious, if bacteremia is present or to be averted, the plasma concentration of free and presumably active drug is important. Thus, if the infection is primarily localized to the lower urinary tract, urine drug concentrations become most important; but if the infection is in the kidney, then both the urine and plasma active drug concentrations may be important.

One thought concerning sensitivity testing now seems to be in order. The most accurate sensitivity studies are those performed by serial tube dilutions. However, the most practical and most frequently used method is disk diffusion. By this latter method "sensitive" usually implies that the organism is likely to be inhibited by concentrations of free drug readily obtained in blood when the usual dosages are employed. There are exceptions and these relate to the sulfonamides, nitrofurantoin and nalidixic acid (Neg-Gram®) where commonly attained urine concentrations are used in the standardization of discs.

Rather than telling you what drugs I use for the treatment of pyelonephritis in particular and urinary tract infection in general, allow me to refer you to Tables 1 to 3. The important points to note are that many drugs, primarily penicillin and similar analogues, have very short serum half-lives and if the plasma concentrations are important, these agents should be given frequently. The next important point is that practically all listed antimicrobials reach very high urine concentrations. If sensitivity testing is correct, these drugs should readily inhibit most bacteria present in urine. Finally it should be noted that, particularly in reference to the group of drugs in Table 2, nephrotoxicity is a regularly associated side effect.

Since we can no longer assume that bacteria will invariably respond to this agent or that agent, I would like to suggest that all local hospital laboratories regularly publish, perhaps weekly, the sensitivity profiles on each species of locally cultured bacteria so as to guide first step treatment.

I generally limit the duration of therapy to 10 to 14 days. This is partly because of habit and convenience but in addition there are now at least two studies which have concerned themselves with the duration of treatment.^{4,8} These studies demonstrate that 10 to 14 day treatment periods are just as effective in preventing recurrence of bacteriuria as longer treatment periods. This, however, does not deny that longer courses of treatment can prevent the recurrence of symptomatic infections but they do not reduce the incidence of recurrent bacteriuria.

Let me now turn to the role of operative management in the treatment of urinary tract infection. It is obvious that if obstructive uropathy is found, antimicrobial therapy probably will not be effective until

Table 1
ANTIMICROBIALS ACTING ON BACTERIAL CELL WALL

ANTIMICROBIAL	DOSE AND ROUTE	PEAK PLASMA LEVEL		PLASMA HALF-LIFE	URINE CONCENTRATION ACTIVE DRUG
		$\mu\text{gm/ml}$	Hours		$\mu\text{gm/ml}$
Ampicillin	500 mgm Oral	4.0	2	0.5-1.0	250 - 1000
Carbenicillin	2000 mgm I.M.	45.0	1-2	0.5-1.0	700 - 1700
Kafocin (Cephaloglycin)	500 mgm Oral	4.0	1	0.5-1.0	260 - 1300
Keflin (Cephalothin)	500 mgm I.M.	12.0		0.5	600 - 4000
Penicillin G	500 mgm Oral	1.2	1	0.5	50 - 2000
Penicillin V	500 mgm Oral	2.5	1	0.5	50 - 2000

Table 2
ANTIMICROBIALS ACTING WITHIN BACTERIA

ANTIMICROBIAL	DOSE AND ROUTE	PEAK PLASMA LEVEL		PLASMA HALF-LIFE	URINE CONCENTRATION
		$\mu\text{gm/ml}$	Hours	Hours	ACTIVE DRUG $\mu\text{gm/ml}$
Chloramphenicol	500 mgm Oral	5.0	2	2	6 - 20
Coly Mycin	1.25 mgm/kgm I.M.	8.0	2	4.5	25 - 200
Gentamycin	0.4 mgm/kgm I.M.	2.3	1	2.3	5 - 150
	1.0 mgm/kgm I.M.	5.0	1	2.3	50 - 400
Kanomycin	500 mgm I.M.	15.0	1	3	20 - 400
Tetracyclines	500 mgm Oral	4.0		3	50 - 200

the obstruction is removed. The problem here is that while it is known that statistical improvement in cure rate occurs after conversion of a nearly complete obstruction to a less severe obstruction, the change in cure rate, as related to the correction of minor degrees of obstruction, has not been determined. Thus, each patient must be considered individually and the merits of operation balanced against the dangers of obstruction and possible urinary tract infection.

Why does treatment fail? In my experience, the most frequent cause of treatment failure is that the patient does not take the medication as directed. Let me diverge at this point and present some data we obtained recently.

The agent used in this study was completely absorbed when taken orally and in 24 hours, 86 to 100 percent of the administered drug was recoverable in urine. To obtain the data presented in Figure 1, 24-hour urine collections and plasma samples were collected midway through a course of therapy. As can be seen in Figure 1, only ten percent of these non-azotemic patients took all their expected doses of medication and only 50 percent took one-half of their expected doses of medication. Since that time, this evidence has been further strengthened by the use of medication diaries and periodic tablet counts during therapy.

Other causes of treatment failure are inadequate dosage of drug, resistance of organisms by selection, mutation or the transfer of R factors, and finally, there is a problem of frequent re-infection, emergence of bacterial variants, inadequate host defenses and increased host susceptibility. Many of these factors are self-evident, but only now are we beginning to study the importance of each of these factors in treatment failure.

To end this discussion, let me say that since an ounce of prevention is worth a pound of cure, the most important question may be, "How can urinary tract infection be prevented?" While not having all the answers, I regularly utilize the following guidelines:

- 1) Don't catheterize or instrument a patient unless absolutely necessary. Certainly catheterization is needed in patients with obstruction and instrumentation is needed, in selected patients, for diagnosis and treatment. However, foresight can often eliminate the need for single catheterizations.
- 2) If an indwelling catheter is necessary, insert it aseptically, keep the system closed and take special care in keeping the peri-catheter areas clean.³
- 3) All women should be instructed that perineal care should be anterior to posterior rather than the reverse, since

Table 3
MISCELLANEOUS ANTIMICROBIALS

ANTIMICROBIAL	DOSE AND ROUTE	PEAK PLASMA LEVEL		PLASMA HALF-LIFE	URINE CONCENTRATION
		$\mu\text{gm/ml}$	Hours	Hours	ACTIVE DRUG $\mu\text{gm/ml}$
Gantrisin	1000 mgm Oral	60	2	4.0	400 - 3500
Gantanol	1000 mgm Oral	120	3	8.0	50 - 1000
Furadantin	100 mgm Oral	0.3		0.3	100 - 500
Macrochantin	100 mgm Oral	<0.3		>0.3	40 - 300
Nalidixic Acid	1000 mgm Oral	18.0	1.5	3.0	15 - 300

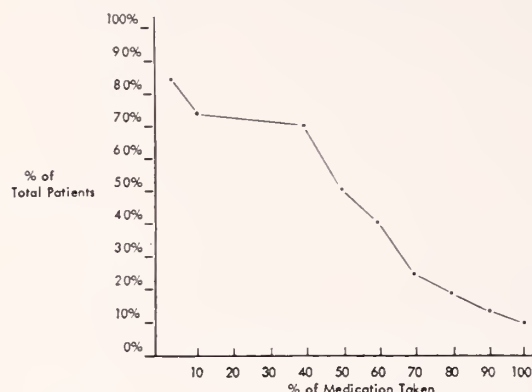


Figure 1. Outpatient Study of Percent Drug Taken.

most bacteria causing urinary tract infections are enteric in origin.

- 4) All patients with repeated infections should be told to take the time to attempt complete bladder emptying. This is particularly important for the hurried housewife who without thought, often leaves a significant amount of residual urine. I tell these patients to void, then wait a moment and then once more try to empty their bladder.
- 5) Lastly, I recommend that many of

these patients increase their fluid intake to maintain a urinary output of two to 2.5 liters per day. This I do since it is inexpensive and, on occasion, has resulted in clearing of bacteriuria. In addition, there are now experimental data in animals to indicate that water diuresis is beneficial in the elimination of bacteriuria.⁹ □

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NEW TREATMENT LAW FOR VD

It is no longer necessary for a licensed physician to have the parents' consent to examine and treat a minor for venereal disease. This provision is found in a new law passed by the last Oklahoma Legislature.

The Legislature adopted the new law after it was pointed out that the majority of VD cases in Oklahoma are found in minors, persons who are unable to give consent for medical examination or treatment. The law removes this impediment and gives them capacity to consent. □

Health of Slaves on Southern Plantations

VIRGINIA R. ALLEN

There were 4,000,000 American slaves before the Civil War. Their health and medical care had a large impact on the practice of medicine in the South.

OUR NATIONAL preoccupation with what has been called the pre-eminent event of our history, the American Civil War, has led also to a greater interest in the institution which led to that war; slavery. Blacks, with their need to explore their own past, and whites with their own need to understand just how it was when men owned other men have both contributed to this new interest.

And once again, it is medicine and health which can tell us so much about the people and the times. The practice of medicine, dealing as it does with the human condition, left one of the few records of the slaves, widely regarded then as less than human.

But in studying that record, it is essential to get a firm grasp on the times: Medicine for all men was more an art than a science. It was the eve of the germ theory and

antiseptic procedures. Bloodletting and purging were still favorite medical practices. Medical fads were frequent, superstitions common and health and medical care for slave and master alike left much to be desired.

The health problems of the South were complicated by a rural society and a southern climate. The temperature, vegetation, the swamps and marshes and the insects increased health problems in the South. The medical profession was in the process of growing and strengthening itself, but the public-health situation was, in general, discouraging. The common laborer, whether a freeman or slave, suffered the most.

The planters of the South concerned themselves with three prime topics: the weather, crops and the health of slaves.¹ Slaves represented a major capital investment of planters. A slave was usually valued at \$100 on the day of his birth and during the 1850's a prime field hand might bring as much as \$1,500. The assumption that a planter would protect the health of his slaves in order to protect his capital investment is logical, but there is disagreement over its validity. The most eminent historian of American medical history, Professor Richard H. Shyrock concluded from his research that the large plantation with a well-organized medical regime was the exception. He said, "In a

word, the *a priori* argument for slave health, in terms of a property interest, has only partial validity—men have been known to neglect even their livestock.”² William Postell in *Health of Slaves on Southern Plantations* believes: “Illness meant loss of labor, and death meant loss of invested capital. It was a situation in which humane and economic interests went hand in hand.”³

Important factors which contribute to good health or lack of it, are food, shelter and clothing. Adequate and proper food is a major factor in assuring good health. Opinions varied among planters as to what constituted adequate and proper food, but most were conscious of the importance of providing sufficient rations for their slaves. Modern investigators believe that slaves suffered little from the lack of food.⁴ Pork, bread, potatoes, and cornmeal were staples of the slave’s diet, as well as of many whites. Many owners added other vegetables and molasses and recognized the value of a mixed diet. Overseers were instructed to raise enough vegetables on the plantation to meet its own needs. On some plantations, slaves prepared food in their own quarters; on others common kitchens near the quarters were used. Gradually, the fact that it was difficult to work all day in the fields and then go home and prepare an adequate meal was realized by many planters. Consequently, it became a common practice to give certain Negro women the task of preparing meals for the field hands. This greatly improved the quality of the food. On many small farms the slaves ate at the same table with their owner and his family.

Clothing was of importance to both the owner and the slave. Usually it was purchased in the autumn after the money for the crop had been received. Newspapers contained large advertisements offering clothing for slaves for sale. Cotton clothing was recommended for April to November and wool for the remainder of the year. Work shoes called brogans were also purchased, but it was common for slaves to go barefooted in the summer. Adequate and appropriate clothing was acknowledged to be important to the health of the slaves. Some owners acknowledged also that neat-

ness in dress was important not only to physical health and comfort, but also to mental health and to individual pride and self-respect. The usual issue of clothing was two suits of cotton for spring and summer and two suits of woolen for winter; four pairs of shoes and three hats. Women’s clothes were classed as dresses, shifts, and chemises, and the children wore straight, one-piece garments. A few plantations had sewing machines and looms which employed pregnant or convalescent women. Overseers were instructed to see that clothing was kept clean and repaired. There were rules, which varied from every day to once a week, for bathing and washing clothes.

Descriptions of slave quarters present a varied picture. Cabins on South Carolina and Georgia plantations were described as being frame, whitewashed and plastered within.⁶ In other places they were log cabins with dirt floors, but a few were of brick construction. Some were very well maintained and others reported as most deplorable and extremely filthy. On the average, they were at least as good as homes of the common laborers of the day and often better. The furnishings were usually crude, but so were those of white laborers. Bed clothing was purchased simultaneously with the personal garments in the fall after the crops were sold. Overseers were to supervise the washing of bedclothes and the periodic airing of beds and scrubbing of quarters.

Work hours were long for the slaves, but were usually no longer than those of white workers. Sometimes Irish workers were hired for dangerous work rather than risk injury to a slave. Pregnant and convalescent women were given lighter tasks. Most owners recognized the need for some leisure time. The cabins were usually arranged around an empty square where the slaves’ merrymaking occurred.

The medical needs of the slaves were usually looked after by the overseer, the owner’s wife, or a physician, or all three. Sometimes the owners assumed the responsibility as did three generations of Pettigrews in North Carolina. Physicians seldom remained long in that rural area and these planters studied and became quite proficient at treating minor injuries and diseases. The Pettigrews carefully and adequately pro-

vided for all the factors influencing the health of their slaves.

Physicians complained that too often owners sought trained medical assistance only as a last resort.⁷ Owners and overseers alike complained of the difficulty of distinguishing between real and feigned illness. Slaves pretending illness were commonly reported. Sick slaves were required to report to the overseer at morning call, either in person or through others if unable to report himself. The overseer was to determine the legitimacy of the complaint. Many plantations provided some kind of hospital or at least some type of segregated place where the sick could be cared for and supervised. The facilities varied greatly in adequacy and comfort and some physicians complained about the lack of adequate facilities on many plantations.

Other health factors were recognized and supervised by some owners and not by others. Many recognized the dangers of overcrowding the cabins and the importance of adequate rest and sleep. Some Negroes had the habit, if not supervised, of not going to bed at all and some of sitting in a chair and dozing all night instead of going to bed. The need for sanitary facilities and a pure water supply was generally recognized.

Since medicine was frequently of the do-it-yourself variety, a number of publications provided medical instructions. A plantation record and account book—*Plantation and Farm Instruction, Regulation, Record, Inventory and Account Book*—widely used in the 1850's, gave the owner tips on plantation management. It contained medical advice and gave a list of recommended items for the plantation medicine chest including: calomel, castor oil, Epsom salts, spirits camphor, spirits nitre, spirits hartshorn, rhubarb, ipecac, jalap, hive syrup, Dover's powder, magnesia, paregoric, laudanum, opium, blister plaster, scales and weights, spatula and mortar, thumb lancet, gum lancet, one pint injection syringe.⁸ Another popular

medical consultant was *The Planter's and Mariner's Medical Companion* by Doctor James Ewell of Savannah. He was first criticized by other physicians for the publication, but later, after they realized the popularity of such publications, other doctors soon wrote similar books. Many family and folk remedies were used, but they generally followed the same pattern of treatment, stressing purging, emetics, bleeding, and blistering. Poultices were sometimes used; salves of pine resin or sweetgum were applied to sores; teas made from Jerusalem oak root or catnip were given for ailments ranging from menstrual cramps to worms. Numerous recipes for herbal teas and salves were passed on in families and neighborhoods.

Although physicians were often consulted only after home remedies were tried, Doctor Richard Arnold of Savannah stated that the reason physicians got into practice more readily in the South than in the North was the possibility of making money from the care of the slaves.⁹ Special rates for the treatment of slaves were established in some states and the difference in volume made up the small difference in price. There was some difficulty in collecting fees for their services and at the Alabama state medical convention in 1847 physicians of that state recommended that practitioners seek liens on slaves they had attended. Physicians were also a part of the "warranty" aspect of slave purchase. Physicians were called upon to pronounce the soundness of slaves for prospective purchasers.¹⁰ Because of this and the additional demand that physicians present medical evidence in court in cases of prosecution for the sale of unsound Negroes, uniform rules were established. Diseases of a chronic or constitutional nature were regarded as incapacitating for hard labor and were the basis for declaring a slave unsound.

Physicians were called in matters requiring surgery. Surgery at this time was mainly restricted to the outside of the body and to parts easily reached through natural channels. Records of doctors and planters reveal that surgery consisted mainly of lancing abscesses, carbuncles and boils, extracting foreign bodies from the ears and nose, amputations and the setting of broken bones.¹¹

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American doctors became early leaders in the field of gynecological surgery. Vesicovaginal fistula was a frequent disability of women, both white and black. Doctor J. Marion Sims of Montgomery, Alabama developed a surgical technique for repairing this injury. Previous attempts by surgeons to correct the damage had not been successful. In 1845, Doctor Sims, convinced that he could repair the condition, found seven cases among slave women whom he took to his hospital. He trained the women to be his surgical assistants and, at his own expense, undertook the operations. After five years and 30 operations he perfected the surgical procedure.¹²

Physicians also served as dentists in their service to the plantations. The extraction of a tooth was a very trying experience and they often found the slave a most reluctant patient. The use of force was sometimes necessary to persuade the unwilling sufferer.

Mortality statistics are unreliable sources of the causes of slave deaths because slaves were frequently not counted or often the diagnoses were made crudely by overseers. Physicians' reports and planters' records are the major source of disease statistics. There was a high incidence of tetanus, whooping cough, hernia and uterine diseases. Negro field hands were very susceptible to pneumonia, cholera, and typhoid. Measles was frequently fatal also. White and black were commonly afflicted with malaria. An epidemic of cholera, which was regarded as more fatal to Negroes than to whites, could devastate the slave population of a plantation. Asiatic cholera epidemics swept through the South during the early 1830's and middle 1840's. The epidemics took thousands of lives. Typhoid also was deadly to a large number of slaves. Doctor Daniel Drake thought that pneumonia was the most fatal of all diseases which afflicted the Negro.¹³ A variety of other pulmonary diseases was common. For reasons not adequately explained, the Negro did not seem to have many fatalities from tuberculosis until after emancipation. Doctor Warren Brickell of New Orleans charged that one of the great causes of Negro mortality was neglect. He said, "Our Negro population is seri-

ously affected by the rude and often careless manner in which everything pertaining to their management is affected."¹⁴ He especially condemned the practice of waiting for several days before asking for medical aid for sick slaves. There was also a high mortality rate among white laborers who were often without trained medical care.

Cachexia Africana (dirt-eating) was the dread of every planter in the South. One doctor reported that he had examined over one hundred dirt-eaters in his practice, and another doctor from Mississippi reported seeing a plantation devastated in two years by dirt-eating.¹⁵ Doctor William M. Carpenter of New Orleans believed the disease was caused by "severity of treatment, giving rise to depressing emotions and a sense of degradation."¹⁶ He believed that this sense of degradation drove them to consume clay, plaster, mud, lime, ashes, shells, rags, and hair. The disease was not restricted to blacks, but also afflicted poor whites. Early in the disease the slaves looked healthy but acted lazy; later their skin became shiny and swollen, their eyelids puffy, and they became completely lethargic. Practically all dirt-eaters died and no one suspected that hookworm infection was mainly responsible for the malady. Many planters thought dirt-eating was only a nasty habit and chained victims, put them in stocks, or bound them with iron gags.

Contrary to popular belief, Negro women were not always prolific bearers of offspring. Planters frequently complained of the tendency of female slaves to abort pregnancies.¹⁶ In one southern county, of 31 cases of spontaneous abortion, 1,051 white women had nine of them, while 554 black women had 22 of the cases.¹⁷ Exposure and hard labor have been credited for the higher rate although many planters gave the slave women lighter tasks during and after pregnancy. Doctor George F. Cooper of Perry, Georgia, remarked that there were three abortions among the blacks to one among the whites and that their "circumstances are much more adverse to gestation."¹⁸ Those who did complete a successful pregnancy were frequently injured for life by inept, ignorant midwives and a prolapsed uterus was a common result. Physicians were usually not called for childbirth unless complications devel-

oped. Whites used midwives commonly also instead of physicians. Puerperal fever claimed a large number of fatalities of both white and Negro mothers. Doctor Oliver Wendell Holmes advocated thoroughly scrubbed hands and equipment at childbirth but few listened to his admonitions. Doctors and midwives were reluctant to admit they were the cause of dreaded "childbed fever."

The infant mortality rate was quite high everywhere. Many slave babies were lost due to infection incurred with the cutting of the umbilical cord and improper care afterward. Most slave mothers were very successful at nursing their babies and special provisions were made for nursing mothers to be available to feed their babies. Negro mothers were often wet-nurses for white babies. Owners and overseers usually supervised the care of infants and small children, but the mortality rate continued quite high. Some owners accused the slave mothers of being disinterested in the proper care of their babies. Diarrhea, dysentery, and childhood diseases took a high toll of infants and small children.

Certain afflictions could be classed as occupational hazards. Cotton picking resulted in sore fingers and joints. Backaches were frequent complaints and hernia was very common among slave laborers. Planters complained of miscellaneous accidents taking a high toll of their slaves. Drowning, being struck by lightning, gunshot wounds, snakebite, broken backs and death by smashing were a few.

It is difficult to assess the incidence of mental illness among slaves. Planters' records reveal that mental disorders occurred more frequently in the slave population than physicians were aware.¹⁹ Mentally ill slaves were not confined to institutions but taken care of by their owners. Many who were not too neurotic or paranoid could be used for some type of labor. Other disorders such as epilepsy and brain fever are also listed in plantation records.

The image of the happy, healthy Negro was important to pro-slavery advocates of the South in their efforts to justify and perpetuate slavery. Some went to great lengths in attempting to prove the validity of this image. In 1840 the first census of the insane in the United States was taken

and it ostensibly indicated that the incidence of mental disturbance was 11 times higher among free Negroes than among slaves.²⁰ The census statistics were seized for propaganda purposes by the defenders of slavery. Although Doctor Edward Jarvis of Concord, Massachusetts exposed the complete inaccuracy of that interpretation of the report, it continued to be quoted by such southern leaders as John Calhoun as proof that slaves were mentally healthier and therefore happier than free Negroes.²¹ The fact that yellow fever seemed to have a lower fatality rate among slaves was also used as evidence by slavery advocates. The *New Orleans Weekly Delta* maintained that Negroes always suffered much less than whites from the ravages of yellow fever and, as long as they remained in the South, they were exempt from the disease and when they journeyed north and stayed a while they became susceptible when they returned south. The *Delta* concluded that slavery was the condition best suited to the Negro's physical improvement and development since it exempted him from a destructive disease to which he would render himself liable by freedom.²²

Although the slavery advocates were portraying the slave as healthy and happy, editors of the *Savannah Journal of Medicine* called attention to the "abundant clinical opportunities for the study of disease" in the large Negro patient population at the Savannah Medical College.²³ Abundant material in southern medical journals reveals that slaves played a significant role in medical education and in experimental and radical medical and surgical practice of the antebellum South.²⁴

Research authorities differ in their conclusions concerning the status of health and medical care of the slaves in the South. One authority concluded: "Slaves suffered from many diseases which little affected white members of the more privileged classes. This susceptibility must be associated with occupation and living conditions. The popular conception of the slaves as a sleek, robust, hearty group, enjoying a high degree of welfare on the old plantation is false. On the contrary, sickness was often a major economic problem, the size of which has been roughly measured in loss of man days of labor and large doctor bills." A plantation

journal is quoted as saying: "Oh! My losses make me almost crazy."²⁵ This same authority believed: "sickness . . . casts a heavy shadow on the conventional picture of idyllic plantation life."²⁶

A less dismal conclusion was reached by William D. Postell through his research. He decided: "From the material presented in this study it seems that the health of slaves was comparable to the public health of that era. The medical care and treatment rendered the slaves was in accordance with the accepted practices of that day, and the failures were the failures of the times. The overall picture of slave health is simply a picture of health conditions in the United States, and their health status was no better and no worse than that of the populace as a whole for that period."²⁷

The question will probably never be resolved, not for a lack of records, though they are sparse. Rather the problem is one of translating the times. How can we understand the reasoning of either slave or master in a society where health care was so primitive by our own standards. Is it possible that today's cruelty might have been yesterday's kindness in some cases? But

even more difficult is the problem of understanding across the cultural, or, if you will, moral gulf. We abhor the owning of humans. They considered it entirely normal. The width of that gulf may make it forever impossible to understand fully even the best of intentions or their results. □

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ANNOUNCING AMERICAN BOARD OF FAMILY PRACTICE Certification Exams

The American Board of Family Practice will give its next examination for certification in various centers throughout the United States. The examination will be over a two-day period on April 29th, 30th, 1972. Information may be obtained by writing:

Nicholas J. Pisacano, M.D., Secretary
American Board of Family Practice, Inc.
University of Kentucky Medical Center
Annex #2, Room 229
Lexington, Kentucky 40506

DEADLINE FOR RECEIVING COMPLETED APPLICATIONS IS FEBRUARY 1st, 1972

IMMUNE SERUM GLOBULIN FOR PREVENTION OF INFECTIOUS HEPATITIS

The agent that causes infectious hepatitis in man is thought to be a virus. Although no vaccine is available, the administration of immune serum globulin (ISG) to exposed persons can afford a high degree of protection against infectious hepatitis. After exposure, ISG should be administered as soon as possible. The appropriate dosage under most circumstances is 0.01 ml of ISG per pound of body weight. Exposure situations must be evaluated individually. The following guide is suggested:

Household Contacts: Contact as occurs among household residents is important in spreading infectious hepatitis. ISG is recommended for household contacts who have not had infectious hepatitis.

School Contacts: Although the highest prevalence of hepatitis is among school-age children, contact at school is seldom an important means of transmitting this disease. Routine ISG is *not* indicated.

Institutional Contacts: Conditions favoring transmission of infectious hepatitis exist in institutions such as prisons and facilities for the mentally retarded. ISG administered to patient and staff contacts can limit the



News From The Oklahoma State Department of Health

spread of disease in these circumstances.

Hospital Contacts: Routine ISG administration to hospital personnel is not indicated.

Office and Factory Contacts: Routine ISG is not indicated for persons exposed in the usual office or factory situation.

Common Source Exposures: When a food or water vehicle is identified as a common source of infection, administration of ISG should be considered for all exposed.

Pregnancy: Pregnancy in itself should not alter ISG recommendations.

Travelers to Foreign Countries: The risk of infectious hepatitis for U.S. residents traveling abroad varies with living conditions and hepatitis prevalence. Pre-exposure ISG is not recommended for travelers using ordinary tourist accommodations.

Reactions: Discomfort may occur at the sight of injection. A few instances of hypersensitivity have been reported. ISG should not be administered intravenously.

COMMUNICABLE DISEASES IN OKLAHOMA FOR AUGUST, 1971

Disease	August, 1971	August, 1970	July, 1971	Total to Date	
				1971	1970
Amebiasis	3	4	4	41	41
Brucellosis	—	1	—	3	4
Chickenpox	3	—	5	187	2409
Encephalitis, infect.	4	1	6	20	13
Gonorrhea	644	607	575	4802	4103
Hepatitis, infect. and serum	89	40	89	519	286
Leptospirosis	—	—	—	1	—
Malaria	—	10	4	61	74
Meningococcal infections	—	1	1	5	19
Meningitis, aseptic	4	10	57	71	29
Mumps	—	3	5	190	2134
Rabies in animals	8	6	6	244	73
Rheumatic fever	1	—	2	18	4
Rocky Mt. spotted fever	2	7	11	25	19
Rubella	2	1	8	62	808
Rubella, congenital syn.	—	—	—	—	—
Rubeola	1	4	10	788	440
Salmonellosis	10	20	38	125	107
Shigellosis	10	6	4	50	54
Syphilis	105	93	69	845	966
Tetanus	—	—	1	1	—
Tuberculosis, new active	33	36	32	232	248
Tularemia	2	—	7	14	7
Typhoid fever	—	1	—	2	1
Whooping cough	—	10	8	16	32

come together!

To the 25th AMA Clinical Convention in New Orleans. Participation will be the key at this medical meeting -- you and your colleagues getting together for a useful and rewarding learning experience. Evaluating and discussing the problems of clinical medicine.

The scientific program is outstanding, with three in-depth postgraduate courses on Behavioral Problems in Children and Adolescents; Cardiovascular Disease; and Fluid and Electrolyte Balance. Other sessions you'll want to attend include Diagnostic Evaluation and Management of Joint Diseases; Dermatological Problems in Everyday Practice; Current Concepts in Gastroenterology; Office Gynecology; Management of Common Problems, and a Symposium on Diverticular Disease of the Colon. Along with these sessions are dozens of scientific and industrial exhibits to help inform you of the latest research and the newest products and services.

Plan to be there. See the complete scientific program and registration forms in the October 18th issue of JAMA.

**25th
AMA Clinical Convention
November 28 - December 1, 1971
the Rivergate
Convention Center
New Orleans**



Oklahoman To Become President of SMA

A past-president of the OSMA, J. Hoyle Carlock, M.D., will become President of the Southern Medical Association during its 65th Annual Meeting beginning October 31st through November 4th in Miami Beach, Florida. He was elected to the association's highest office at its last annual meeting and has served as President-elect during the past year.

One of the largest general medical organizations in the country, the Southern Medical Association embraces 16 southern states and the District of Columbia. Annually, it holds a scientific meeting during which some 300 papers are presented and which draws an attendance of 4,000 to 5,000. Its exclusive purpose is to develop and foster scientific medicine.

The Miami Beach meeting, to be held in the Fontainebleau Hotel, promises to be one of the most outstanding ever held. Twenty-one general scientific sections are planned with all papers geared to the practical side of the practice of medicine. Each section has invited a nationally prominent guest speaker.

Section meetings will be held on Allergy, Anesthesiology, Colon and Rectal Surgery, Dermatology, Gastroenterology, General Practice, Gynecology, Industrial Medicine and Surgery, Medicine, Neurology and Psychiatry, Obstetrics, Ophthalmology, Orthopedic and Traumatic Surgery, Otolaryngology, Pathology, Pediatrics, Physical Medicine and Rehabilitation, Plastic and Reconstructive Surgery, Radiology, Surgery, and Urology.

In addition to the scientific sections, three general sessions will be held. The first will be Tuesday noon, November 2nd, and will feature as guest speaker, Merlin K. Duval, Jr.,

M.D., the new HEW Assistant Secretary of Health and Science. Doctor Duval was formerly at the O. U. School of Medicine. The second session will be Wednesday morning and will include a symposium on "National Health Insurance" with Congressman Joel T. Broyhill, of Virginia, as guest speaker. The last general session on Thursday morning will present a symposium on "Medical Economics," and the business side of medicine with special emphasis on pension plans, investment plans, office routines, and various other economic factors.

Doctor Carlock will officially become President of the Southern Medical Association at the President's Night Dance Wednesday evening, November 3rd. At that time he will take over from Albert C. Esposito, M.D. of Huntington, West Virginia.

Several specialty medical societies will hold meetings conjointly with the association. Included will be the American College of Chest Physicians, Southern Chapter; Radiological Society of North America; and the Southern Gynecological and Obstetrical Society.

Physicians interested in attending the meeting should write the Southern Medical Association, 2601 Highland Avenue, Birmingham, Alabama 35205 for advanced reservations. Housing reservations may be made by contacting the Southern Medical Association Housing Bureau, 1700 Washington Avenue, Miami Beach, Florida 33139.

All scientific activities will be held in the Hotel Fontainebleau and are open to physicians, medical students, technicians, and nurses. There is no registration fee.

Hotels for the convention include the Fontainebleu, Crown, Lucerne, Barcelona, Eden Roc, Montmartre, all in Miami Beach. □

Drug Abuse Treatment Offered by VA

Drug abuse among American soldiers, especially those in Vietnam, has become so severe as to be alarming. As a result President Nixon directed the Veterans Administration Hospitals to institute drug treatment programs.

When the President made his announcement there were five drug treatment programs in VA Hospitals scattered throughout the United States. He directed that this number should be expanded to 34 by January 1st of next year. The Oklahoma City VA Hospital was already in the process of setting up a drug treatment unit when the announcement was made.

Drug abuse among servicemen came to public attention when it was revealed that many men were being discharged from the Armed Forces while suffering from severe drug dependency up to, and including, heroin addiction.

The new program is available to any person who has ever been in any branch of the United States Armed Forces and who has a history of drug abuse and a desire to get off drugs.

Two clinical psychologists and a psychiatrist are currently operating the Oklahoma City Drug Treatment program with the aid of a number of other specialists. They are in the process of hiring an additional psychiatrist, a clinical psychologist, and two counseling psychologists.

According to John Moreland, Ph.D., the program will not take a person who is psychotic or a serviceman with a dishonorable discharge. However, he pointed out that other VA facilities are available for the psychotic patient, and the Veterans Administration is in the process of reviewing all dishonorable discharges to see if they were "drug related." In the event that

Physicians Invited To Join Art Association

a dishonorable discharge was due to drugs, the serviceman may be eligible for the program.

Referrals to the program are being accepted from physicians, social service agencies, or the patient himself. The only thing necessary is for the patient to present himself at the VA Hospital Admissions Desk and ask for help.

The VA Treatment unit in Oklahoma City was originally on an inpatient basis only. However, they have recently added an outpatient care section.

Doctor Ronald Krug, Ph.D., a clinical psychologist, is directing the program and is assisted by Doctor Moreland, and Hal Chandler, M.D., a psychiatrist.

For additional information interested persons should contact one of the three doctors at the VA Hospital, 915 N.E. 13th, Oklahoma City. The telephone number is Area Code 405, 235-9421, Extension 409. ☐

Medical colleagues are invited to become members of a national non-profit organization which is dedicated to furthering art interests of the medical profession; to broaden the physician's knowledge and appreciation of the past and present; to stimulate physician artists to produce works of art in the fields of painting, sculpture, photography, graphic arts, design and creative crafts and to holding a national annual exhibition of physicians' art works. The organization is the American Physicians' Art Association.

The art exhibit is held annually in conjunction with the annual meeting of the American Medical Association. The APAA has a membership which extends across the entire United States, Canada and Latin America. Every state in the Union is represented through a Regional Director.

It is hoped that a central photographic archive of its members' art works can be used for year-round

press and magazine publicity in the physicians' home towns as well as nationally.

A physician does not necessarily have to be currently engaged in any art activity to become a member.

Physicians interested in more information concerning the association should contact the President of APAA, A. M. Gottlieb, M.D., 3891 Miranda Avenue, Palo Alto, California 94304. ☐

Teenagers With VD Treatable Without Parents Consent

After it was pointed out to the Oklahoma Legislature that the majority of venereal disease cases in Oklahoma are found in minors, persons who are unable to give consent for medical examination or treatment, a new law was adopted which removes this impediment.

The new law provides that it is no longer necessary for a licensed physician to have the parents' consent to examine and treat a minor for venereal disease. ☐

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PHS Physicians May Come to Oklahoma

When it passed Public Law 91-623, known as the Emergency Health Personnel Act of 1970, the United States Congress authorized commissioned officers and civil service personnel of the U. S. Public Health Service to be assigned to areas of the U. S. where health services are inadequate.

The law carried an appropriation of \$20,000,000 for the fiscal year ending June 30, 1972, and \$30,000,000 for the fiscal year ending June 30, 1973, to implement the program.

The law establishes the "National Health Service Corps" and uses the officers and personnel of the U. S. Public Health Service to do so. According to information published by HEW, the "program is not meant to deal with the problem of the overall shortage of physicians and other health personnel in the nation but is aimed at alleviating some of the more acute problems arising in critical health manpower shortage areas."

Physicians, dentists, and nurses as well as supporting medical personnel may be assigned to an area, depending on its needs and the type of health personnel available locally. The intent is to assign "health teams" rather than individual practitioners wherever possible.

Areas of assignment will be designated by the Secretary of Health Education and Welfare based on certain criteria. These include such factors as population, the ratio of physicians to population, the number and type of other health personnel and health facilities and their accessibility. The request that an area be so considered for designation may come from a state or local health agency or other public or non-profit private health organization.

The new law provides that the local government of the area, the state or district medical societies and dental societies, or some other appropriate health group must certify to the Secretary that a critical

shortage of health manpower does exist.

Because of limited manpower resources in the NHSC, not all communities designated as critical shortage areas will have personnel assigned to them. For the first year of operation the program has authorized only 600 corps personnel for the nation as a whole.

Local communities will be asked to support corps personnel assigned to it. Such support might include provision of office space, equipment, and supplies, and health personnel available in the area other than physicians and dentists. Members of the community will be involved in planning and helping implement the system by which their health services are provided. The community

and the assigned members of the corps will have an opportunity to work together to develop a "system for the delivery of health services tailored to the needs of that particular community."

Recipients for services from one of the corps physicians will be charged a reasonable cost. The amount will be determined in accordance with the regulations which govern the program. However, persons deemed unable to pay will not be charged for services.

No part of the charges made will be paid to members of the corps. Corps personnel will be salaried employees of the federal government. Monies collected will be returned to the federal treasury in accordance with the law. ☐

DEATHS

W. JULIEN BAHR, M.D.
1927-1971

W. Julien Bahr, M.D., Chief of the Outpatient Service at Veterans Administration Hospital in Oklahoma City, died September 24th, 1971. A native of Des Moines, Iowa, Doctor Bahr graduated from the University of Oklahoma School of Medicine in 1955, where he later became Associate Professor of Medicine. Following his residency training in Internal Medicine, he joined the staff of the VA Hospital in Oklahoma City.

Doctor Bahr was well-known as moderator of the television program "Medicine and You" televised in Oklahoma City, and received an award for Outstanding Service to Medicine and the Public from the Oklahoma County Medical Society in 1968. He was a member of the Board of Contributing Editors of *The Journal of the Oklahoma State Medical Association*.

Certified by the American Board of Internal Medicine, Doctor Bahr was a member of the Oklahoma City Internists Society.

RICHARD STORTS, M.D.
1934-1971

A native, Muskogee physician, Richard A. Storts, M.D., died in the crash of his plane near Coats, Kansas, the night of August 6th. The orthopedist was graduated from the University of Oklahoma School of Medicine in 1959. Following his residency training at the school of his graduation, he established his practice in Muskogee.

LEO R. EVANS, M.D.

A former Pocasset, Oklahoma, physician, Leo R. Evans, M.D., died near Beech Creek, California, on July 28th, 1971. He was a 1927 graduate of the University of Oklahoma School of Medicine. He had been County Health Officer in Muhlenberg County, California for ten years prior to his retirement on July 1st of this year. ☐

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Doctor Payne Honored

Richard W. Payne, M.D., Oklahoma City physician, (center) is shown receiving the "Physician of the Year" award from Leonard Platt, President of the Oklahoma Rehabilitation Association. Hollis Scott, Councilor, Rehabilitative Services, Oklahoma City, is shown on the right.

The award, presented on September 20th, 1971, in Oklahoma City, is given annually to an Oklahoma physician for his outstanding contributions and programs in helping the handicapped help themselves, especially in the medical field. ☐

Republican Executive Group Opposes National Insurance

A resolution urging the retention of this nation's private enterprise system of medical and health care passed unanimously by the Executive Committee of the Oklahoma County Republican Committee. It expressed opposition to "any further involvement of the federal government in the provisions of or financing of health services. . . ."

Adopted August 26th, the resolution pointed out that efforts to involve the government in the provision or financing of health services have "frequently resulted in reduced quality and increased costs," and went on to say that programs of national health insurance in other nations have resulted in doctor shortages, long delays in gaining hospital admissions, and severe over-crowding of health care facilities.

The resolution blasted those that were promulgating the "myth that a crisis in health care exists in this nation, with the goal of creating support for the establishment of

some form of national health insurance. . . ."



Practice Opportunities Listed by OSMA

One seldom mentioned activity of the OSMA is its Physician's Placement Service. The association acts as a clearing house to pair up practice opportunities and physicians seeking a new location.

Periodically the association receives a list of physicians from the AMA who are seeking practice possibilities in the Southwestern part of the United States. The association also maintains a file of letters from physicians specifically seeking locations in Oklahoma.

Practice opportunities are catalogued by the association. At the present time there are 65 locations available for general practitioners, and an additional 50 for various specialties.

Physicians interested in moving within the state are urged to contact the OSMA Placement Service. This information will be put on file and as practice opportunities de-

velop the information will be sent out.

In addition, the association would like to know of practice opportunities, especially those that are actively seeking physicians at the present time. ☐

Miscellaneous Advertisements

EXCELLENT OPPORTUNITY for General Practice or General Medicine, in fastest growing community in Southwest. Privileges in modern new fifty-bed hospital. Space is available in clinic to be opened early in 1972 with reasonable lease. Can expect full time practice within a few months, along with off time coverage. Located in community of 20,000 with only four GPs. Ideally located between University of Oklahoma campus and municipal Oklahoma City. The ideal small town practice with large town advantages. If you want a family type practice with time off, please call C. J. Shaw, M.D., 1930 North Broadway, Moore, Oklahoma, 405 794-5533 collect or Edwin Horne, M.D., 405 794-7289 collect.

GENERAL SURGEON desires practice opportunity in Oklahoma; board certified, American College of Surgeons; 44 years old; graduate of Kansas University. Write Key W, The Journal, Oklahoma State Medical Association, 601 N.W. Expressway, Oklahoma City 73118.

FOR SALE: C.S.&E. Incubator, 2 Dozor lamps, Birtcher #850 Diathermy, Infrared lamp and Sklar Suction pump on stand. Contact Key J, The Journal, Oklahoma State Medical Association, 601 N.W. Expressway, Oklahoma City, Oklahoma 73118.

POSITION AVAILABLE for a board eligible or certified OB-GYN in an incorporated practice in Northeastern Oklahoma. Generous starting salary leading to becoming shareholder in corporation. Many fringe benefits. Contact Robert A. Yeakley, M.D., 3212 West Broadway, Muskogee, Oklahoma 74401. Phone 918 687-5477. ☐

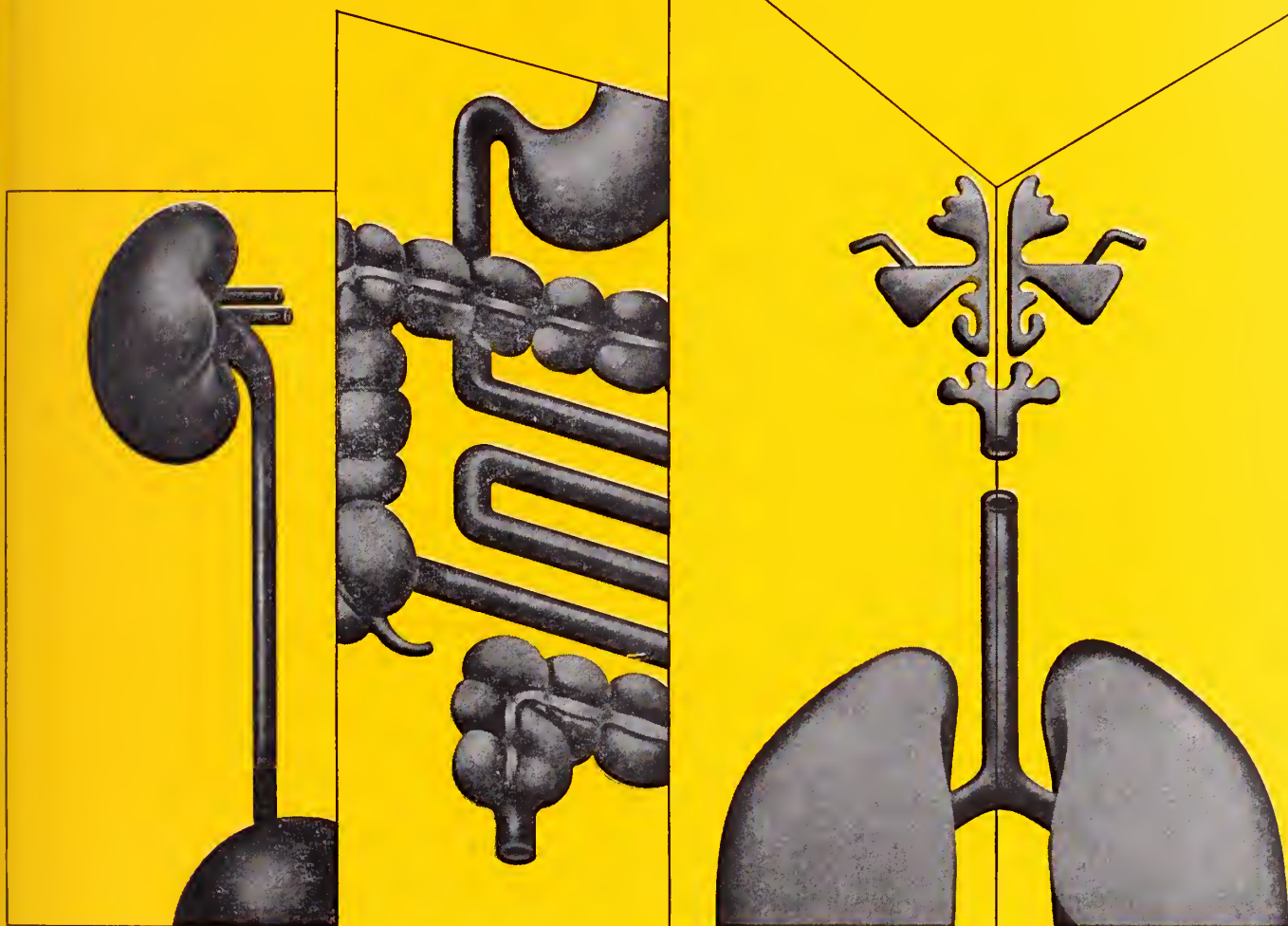
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Also infections due to Gram-positive and Gram-negative organisms, when bacteriologic testing indicates appropriate susceptibility to the drug.

Contraindications: Hypersensitivity to tetracyclines.

Warnings: Photodynamic reactions have been produced by tetracyclines. Natural and artificial sun-

light should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used and serum estimations may be necessary with prolonged therapy. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood).

Precautions: Mycotic or bacterial superinfection may occur. Cases of gonorrhea with a suspected primary lesion of syphilis should have darkfield examinations before receiving treatment. In all other cases where concomitant

syphilis is suspected, monthly serological tests should be performed for at least 4 months.

Plasma prothrombin levels may be depressed, patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage. In long-term therapy, periodic laboratory evaluation of hematopoietic, renal and hepatic organ systems should be performed.

Adverse Reactions: Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. Infants may develop increased intracranial pressure with bulging fontanels. Hemolytic anemia, thrombocytopenia, neu-

tropenia, and eosinophilia have been reported.

Usual Dose: Usual Adult Dose: One Gm./day in 2 or 4 equally divided doses. Continue therapy for ten days in Group A beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals.
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5 ADDITIONAL DIAGNOSES (CHRONIC DISEASE OF DEFECT FOUND DURING PREP)

6 DATE OF ONSET	7 DATE FIRST CONSULTED	8. DUE TO PREGNANCY ¹ <input type="checkbox"/> YES <input type="checkbox"/> NO
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11 SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

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COMPLETE IF PATIENT

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Form 10

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Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., certain elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently—they can both cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triam-

terene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

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Oct. 19—URINARY TRACT INFECTION, PART II
(25 Min.)

Oct. 26—URINARY TRACT INFECTION, PART III
(25 Min.)

*Productions from The University of Western Ontario
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Nov. 2—ALLERGY REPORT (30 Min.)

Nov. 9—CHEST PROBLEMS IN CHILDREN
(30 Min.)

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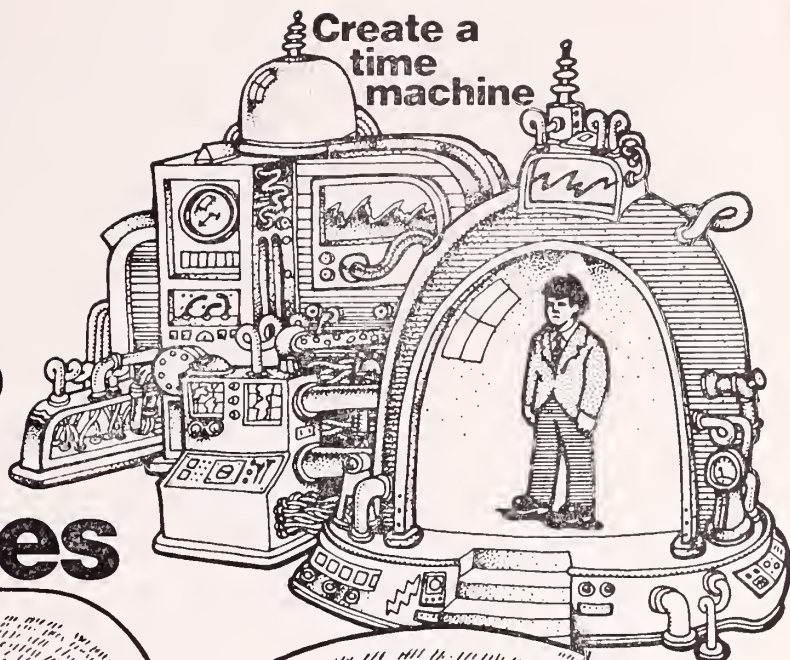
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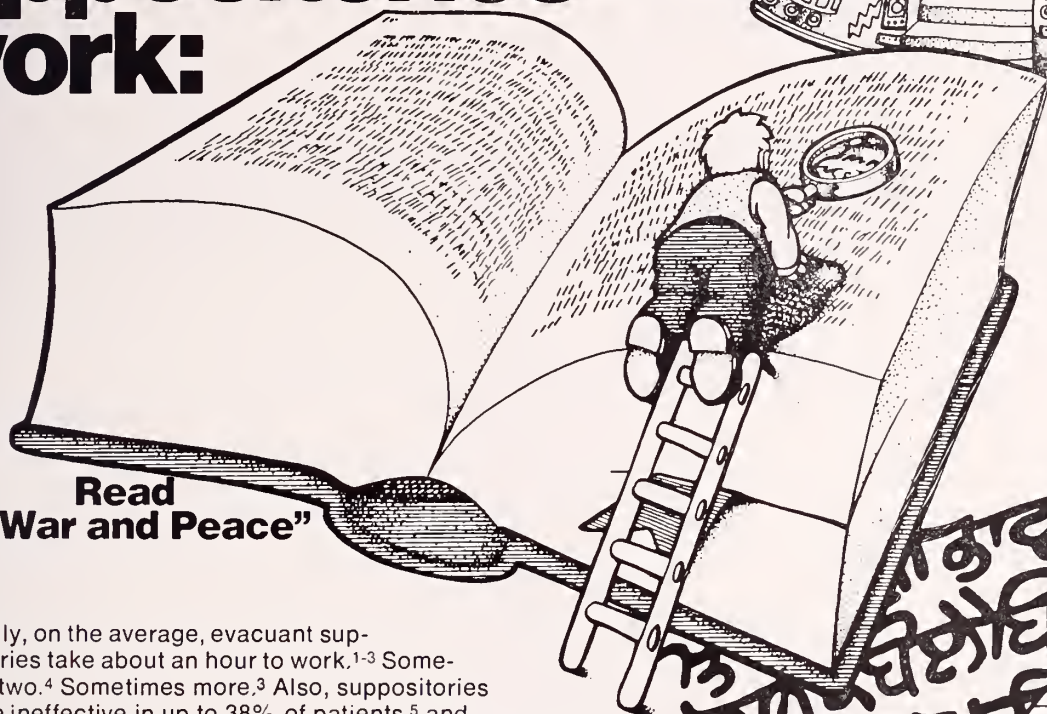
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Actually, on the average, evacuant suppositories take about an hour to work.¹⁻³ Sometimes two.⁴ Sometimes more.³ Also, suppositories can be ineffective in up to 38% of patients,⁵ and not infrequently produce smarting, burning and tenesmus.⁶

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FLEET ENEMA works within 2 to 5 minutes without pain or spasm. FLEET ENEMA induces a physiological pattern of evacuation, unlike purgatives and laxatives that may liquefy the stool.

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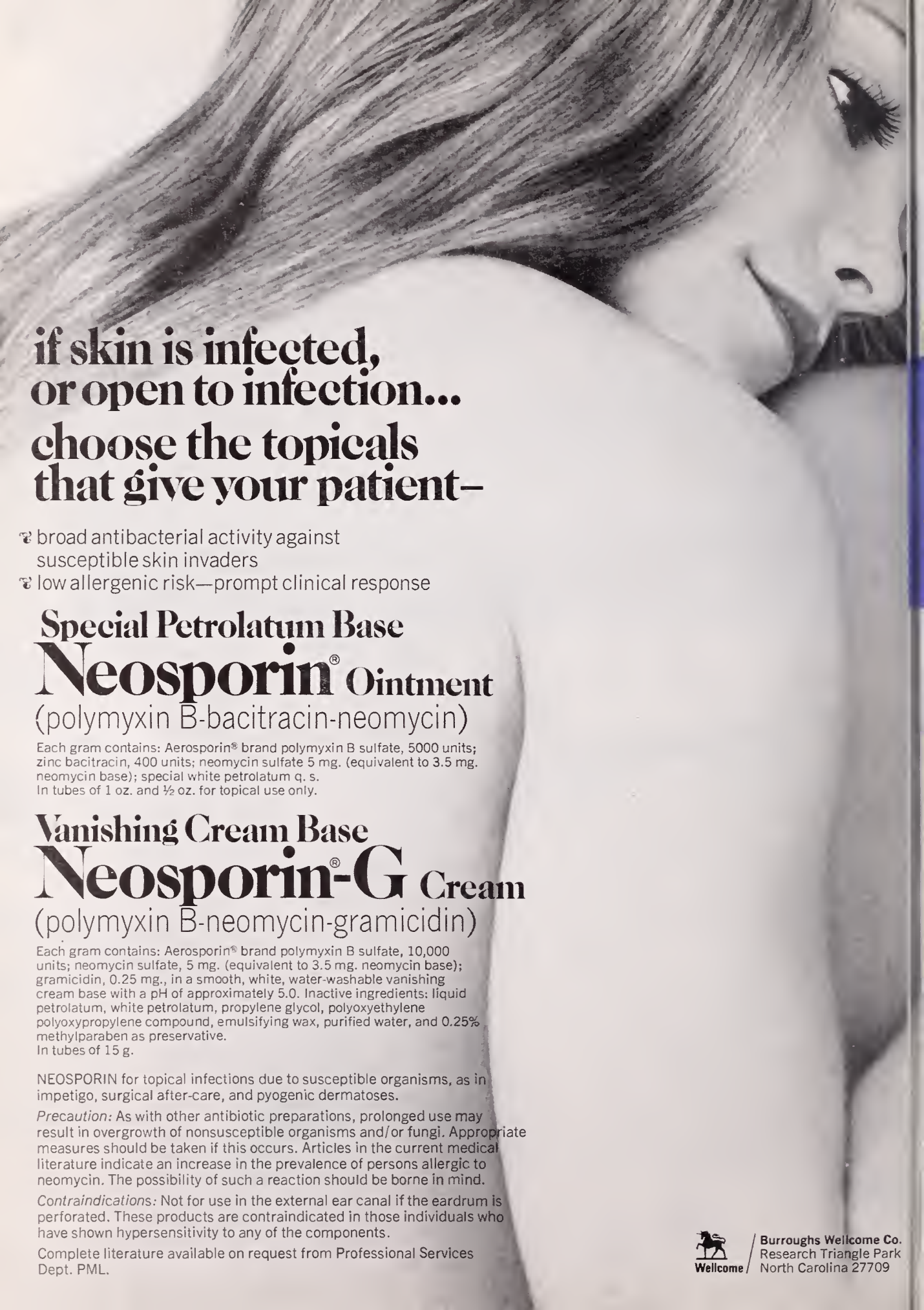
FLEET ENEMA. Regular and pediatric. Both completely disposable—like suppositories, only better. Much better.



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Warning: Frequent or prolonged use of enemas may result in dependence. Take only when needed or when prescribed by a physician. Do not use when nausea, vomiting or abdominal pain is present. **Caution:** Do not administer to children under two years of age unless directed by a physician. **References:** 1. Blumberg, N.: Med Times 91:45, Jan., 1963. 2. Sweeney, W. J., III: Amer J Obstet Gynec 85:908, Apr. 1, 1963. 3. Weinsaft, P.: J Amer Geriatr Soc 12:295, Mar., 1964. 4. Baydoun, A. B.: Amer J Obstet Gynec 85:905, Apr. 1, 1963. 5. Feder, I. A., Flores, A. and Weiss, J.: Amer J Gastroent 33:366, Mar., 1960. 6. Smith, J. J. and Schwartz, E. D.: Western J Surg 72:177, May-June, 1964.





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In tubes of 1 oz. and ½ oz. for topical use only.

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NEOSPORIN for topical infections due to susceptible organisms, as in impetigo, surgical after-care, and pyogenic dermatoses.

Precaution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

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Complete literature available on request from Professional Services Dept. PML.



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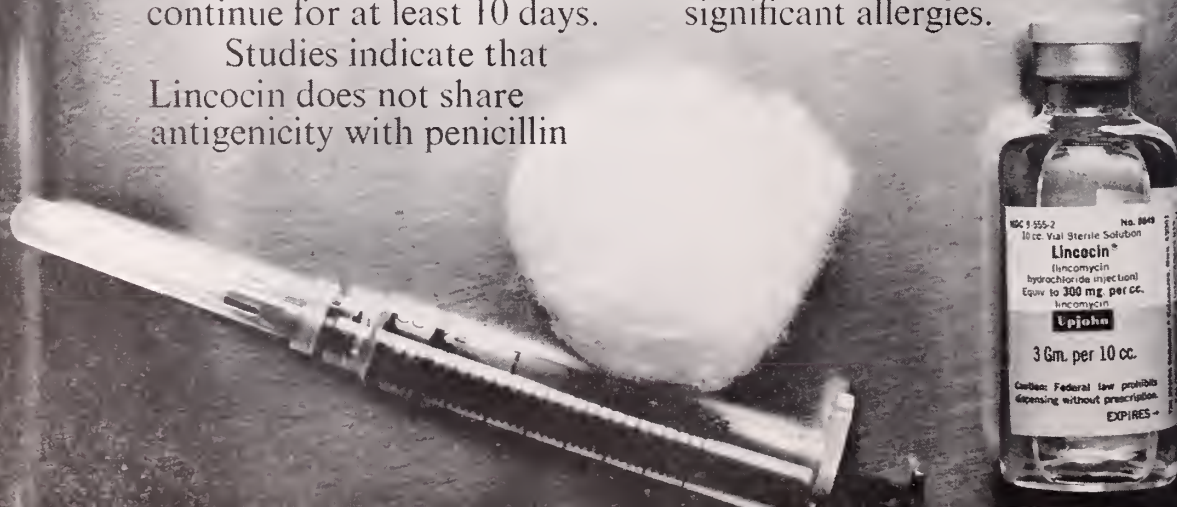


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Each preparation contains: Lincomycin hydrochloride monohydrate equivalent to lincomycin base

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*Contains also: Benzyl Alcohol 9 mg.; and,

Water for Injection—q.s.

An antibiotic chemically distinct from others available, indicated in infections due to susceptible strains of staphylococci, pneumococci, and streptococci. *In vitro* susceptibility studies should be performed.

CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. **Local reactions**—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

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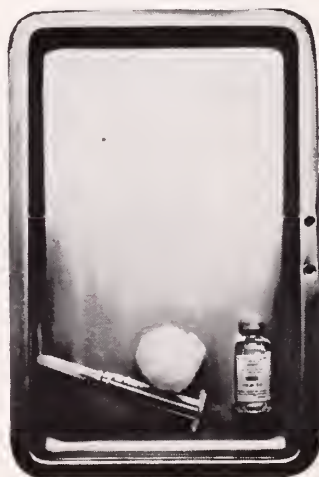
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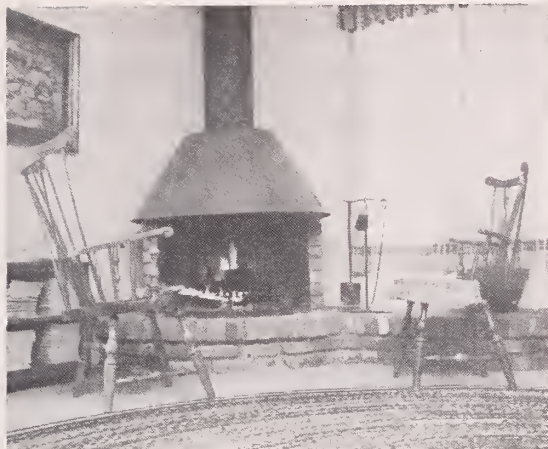
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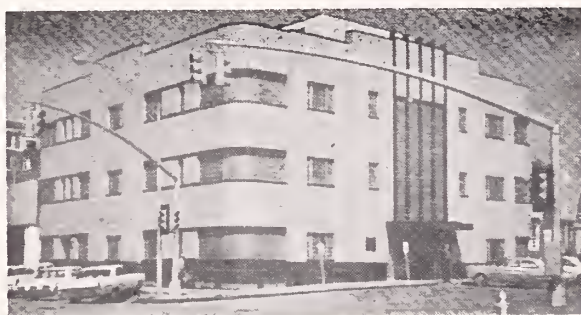
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of the Oklahoma State Medical Association

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February Issue

Editorial, Scientific, Book Reviews December 15, 1971
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There are millions of youths, 25 years of age and under, in our country and each one of them will make two major decisions in their life-time: One in regard to marriage and the other in regard to a career. Because of the national shortage of health personnel, the recruitment of people of all ages from all groups of the population for health careers is a priority now. Some professional areas are overloaded at the moment but not so in the health careers.

This can be a most exciting and rewarding year in the area of Health Careers promotion. As you make plans, think in terms of all college, senior and junior high school students in your county and district. Write to OCHC (Oklahoma Council for Health Careers), 828 N.E. 15th, Oklahoma City 73104 and ask for materials so that you can know exactly what is available in the 200 plus career opportunities. There is a place for every youth interested in a health field. Not all students are, or should be, college bound. There is a career in the future for these students too.

Some counties are finding Health Career Seminars an excellent way to inform. By a three-year scheduling almost all of the health careers can be covered. The students meet at a hospital or center and after a discussion of general interest to all, in groups, they spend time in some department where they are able to hear and talk with health workers actually in their field of interest.

Some auxiliaries cooperate with other organizations, such as hospital auxiliary, and by working together, strengthen their effort.

Some counties may wish to sponsor a Health Fair at some time during the year. Booths are prepared and then manned by personnel, from the various health areas,

who can talk with youths and give valuable information.

Some counties or schools plan special tours for their students at some time during the year. A Health Science Club or interested group may wish to tour the University of Oklahoma Medical Center in Oklahoma City. The Interns and Residents Wives are sponsoring these tours again this year. Such a tour can be scheduled by writing to Mrs. Richard Walters, 1312 Brighton, Oklahoma City 73120 or telephone 405 842-0444.

OCHC has prepared an excellent High School Health Science Club Handbook. Encourage its usage by some sponsor in each school. Many times the faculty is already overloaded with extra duties and there is no one available to sponsor such a club. Perhaps you could serve in this capacity.

Last year over 25,000 students saw the film presentation brought to them by OCHC. Road Show '71 is now in motion. The film presentation this year is titled "The First Day"—of the rest of your life—presenting the challenge to the student to consider what he/she will do with his life. This is a 40 to 60 minute presentation which is unique, interesting, informative and educational. If your school did not book this show last year do encourage your principal to write or call OCHC now to be on the schedule for this school year.

Every auxiliary member can participate in Health Career Recruitment through the mini, midi or maxi program suggestions now in the hands of your President or Health Careers Chairman.—*Mrs. W. J. Williams, State Health Careers Committee Chairman.*

National health insurance hearings are expected to convene in mid-October before the House Committee on Ways and Means. The public hearings are expected to last about six weeks, with the first week devoted to administration witnesses and the remaining five weeks to public witnesses. It appears that the hearings will be interrupted during the first week of November when Chairman Wilbur Mills and members of his committee are scheduled to be in Europe. The first witness will be Elliott L. Richardson, HEW Secretary, who will present the association's case for its own bill, the National Health Insurance Partnership Act. Mills has said he hopes his committee can complete the public hearing phase on national health insurance proposals before adjournment this year. However, he stated he does not expect the committee to complete consideration of legislation until next year.

HMOs moved a step closer to reality when the Department of HEW published proposed regulations authorizing the nationwide use of prepaid group practice as a method of providing medical care under the Federal Employees Health Care Benefits Plan. Under the proposed regulations a carrier could, by contract, provide comprehensive medical services through a group practice unit or organization. "Comprehensive medical services" provided under such contracts, include preventative, diagnostic, and therapeutic services furnished on a prepaid basis. Washington observers describe the new regulations as pretty well defining what HEW refers to as "Health Maintenance Organizations," known as HMOs.

While "consumer participation" has been

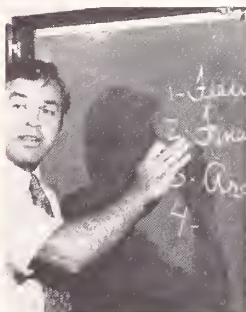
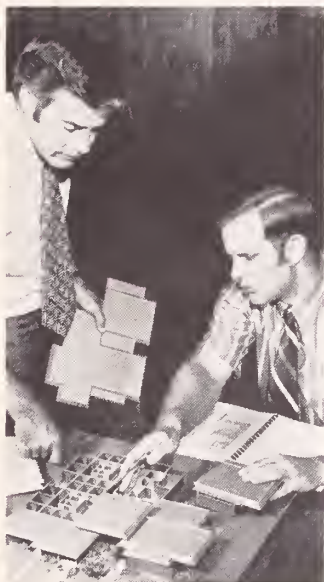
the hue and cry recently, a new policy statement from the American Hospital Association calls for "professional participation." The policy directs the AHA to actively promote participation by medical staffs on hospital governing boards. The statement, which cites medical staff participation as "a means to improve and effect solutions of health care problems for the hospital and the community" enlarges upon policy in effect since 1953. Three mechanisms for such participation are outlined. These include board membership, membership on board committees and utilization of joint conference committees. The policy emphasizes that medical staff participation in hospital decision making is essential.

Medicaid will be overhauled to provide considerable cost savings to states if House Ways and Means Committee Chairman Wilbur Mills has his way. When Mills announced that the committee would begin holding public hearings on national health insurance, he said that it will "devote very close attention" to reducing the share of Medicaid costs presently born by the states.

Price restraint on health care providers apparently has been under discussion by the Nixon Administration for some time. HEW Secretary Richardson announced that such restraint would be given great consideration as part of Phase II of the Wage-Price Freeze. It is being predicted that the administration could use the Federal Employees Health Care Benefits Plans as a lever since it is one of the largest insurance plans in the country and is a trend-setter for the health insurance industry. Some officials see a ceiling on hospital rates as a possibility for long range Phase II plans. Washington observers state that the administration is a long way from having any firm plans on Phase II's affect on the health care industry, but the Richardson announcement made it clear that they were being formulated. □

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other

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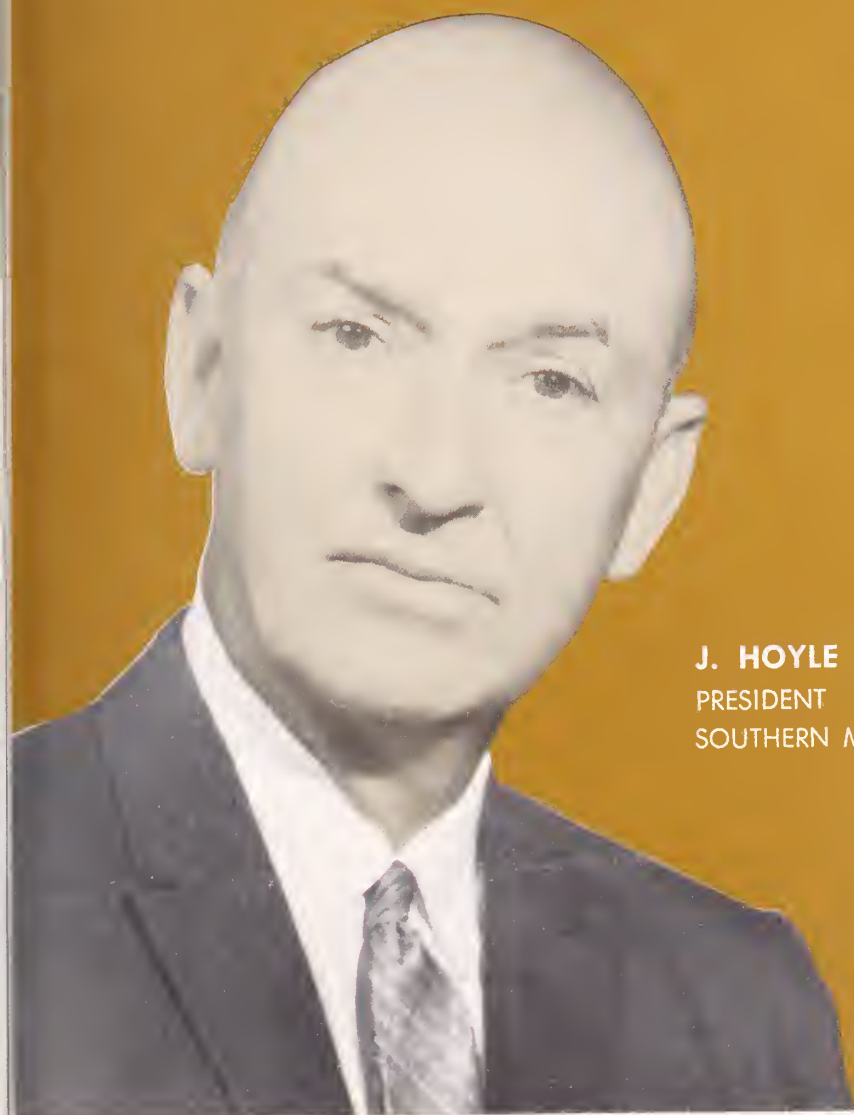
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. **Adults:** Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium[®] (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 100 and 500. All strengths also available in Tel-E-Dose[™] packages of 1000.

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Patients fell asleep quickly

Dalmane (flurazepam HCl) 30 mg reduced awake time—both before and after falling asleep—by fifty percent of pretreatment values in patients with insomnia.^{1,2}

Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

These studies utilized identical protocols and included eight insomniac patients. Sleep laboratory measurements in a limited number of patients are derived from all-night electroencephalographic, electro-oculographic and electromyographic tracings. Unlike traditional methods of evaluation, they are quantitative, reproducible and projectable to large numbers of subjects.

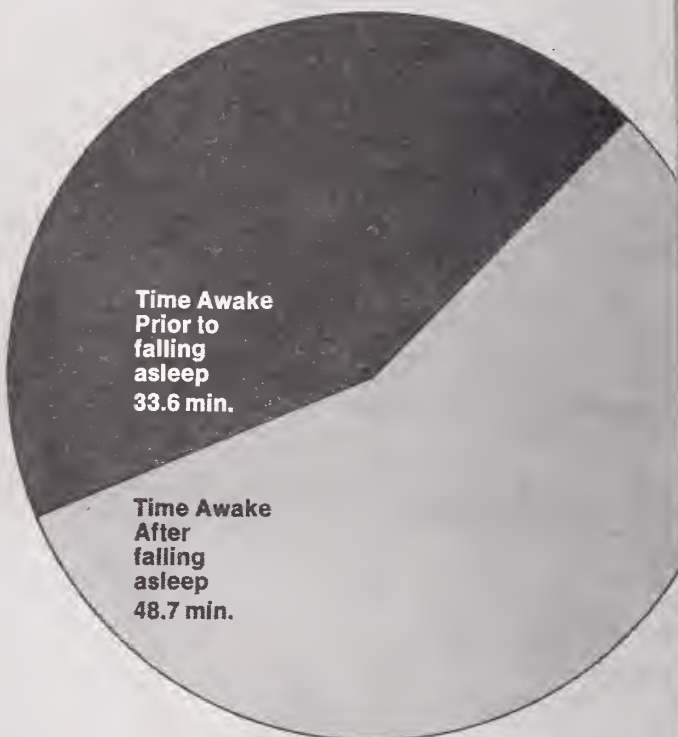
Results shown represent average values in all subjects for the three consecutive nights of placebo administration prior to Dalmane therapy and the seven consecutive nights on Dalmane 30 mg.

Dalmane is also relatively safe, as reported in clinical studies. Instances of morning "hang-over" have been relatively infrequent; paradoxical reactions (excitement) and hypotension have been rare. Dizziness, drowsiness, lightheadedness and the like were the side effects noted most frequently, particularly in the elderly or debilitated. (An initial dose of Dalmane 15 mg should be prescribed for these patients.)

References: 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

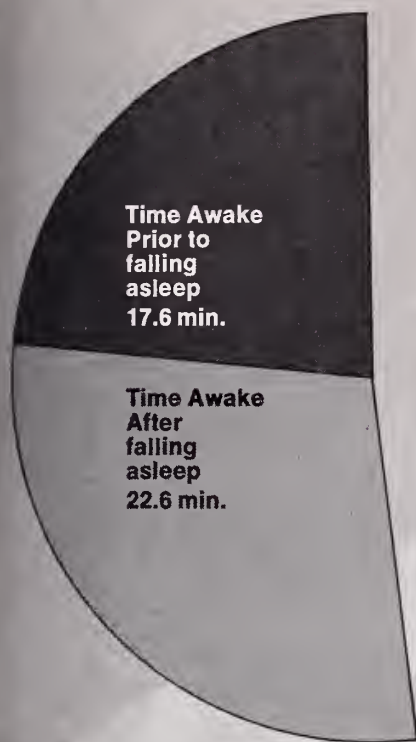
2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

Before
Dalmane
(flurazepam HCl)



and slept through the night

On
Dalmane
(flurazepam HCl)



Average sleep laboratory measurements in cited studies

Parameter	Before Dalmane	On Dalmane
Time required to fall asleep	33.6 min.	17.6 min.
Wake time after onset of sleep	48.7 min.	22.6 min.
Number of wakeful periods after onset of sleep	12.2	8.4
Total sleep time	420.0 min.	447.5 min.
Total sleep percent	88.6	94.5

Clinical effectiveness as
proven in the sleep laboratory

Dalmane®

(flurazepam HCl)

One 30-mg capsule h.s.—usual adult dosage.

One 15-mg capsule h.s.—initial dosage for
elderly or debilitated patients.

Before prescribing Dalmane (flurazepam HCl), please consult Complete Product Information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



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rather than abrupt diuresis.
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Hygroton[®] chlorthalidone USP

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have you
met them
socially?



Electrolyte imbalance may occur when using diuretics. Hygroton is contraindicated in severe renal or hepatic diseases and, of course, if it causes hypersensitivity. Carefully supervise those who may be receiving other antihypertensives.

Hygroton[®] chlorthalidone USP *Indications:* Hypertension and many types of edema involving retention of salt and water. *Contraindications:* Hypersensitivity and most cases of severe renal or hepatic diseases. *Warnings:* With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has been required frequently and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Use with caution in pregnant women and nursing mothers since the drug crosses the placental barrier and appears in cord blood and since thiazides appear in breast milk. The drug may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. When used in women of childbearing age, balance benefits of drug against possible hazards to fetus. *Precautions:* Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria. Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. *Adverse Reactions:* Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, glycosuria, hyperuricemia, headache, muscle cramps, orthostatic hypotension, which may be potentiated when chlorthalidone is combined with barbiturates, narcotics or alcohol, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization. *Average Dosage:* 50 or 100 mg. with breakfast daily or 100 mg. every other day. *How Supplied:* White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000. (B)46-230-G For full details, please see the complete prescribing information.

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The **JOURNAL**

NOVEMBER
1971
Vol. 64, No. 11

of the Oklahoma State Medical Association

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10:30 p.m. To bed with tablets or suspension. Either dosage form of Gantanol[®] (sulfamethoxazole) provides reliable therapy for nonobstructed cystitis.

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In addition, Gantanol diffuses readily into interstitial fluids for antibacterial activity at the foci of the infection.



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Indications: Effective in acute, recurrent or chronic urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) and in the absence of obstructive uropathy or foreign bodies. *Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response. Add aminobenzoic acid to culture media of patients receiving sulfonamides. Resistant organisms present a current problem to the usefulness of antibacterial agents. Blood levels should be measured in patients receiving sulfonamides for serious infections, since there may be wide variations with identical doses; 20 mg/100 ml should be the maximum total sulfonamide level, as adverse reactions occur more frequently above this level.

Contraindications: Sulfonamide hypersensitivity; infants

less than 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis); pregnancy at term and during nursing period.

Warnings: Safe use in pregnancy has not been established, and teratogenicity potential has not been thoroughly investigated. Sulfonamides will not eradicate or prevent sequelae to group A streptococcal infections, *i.e.*, rheumatic fever, glomerulonephritis. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported; early clinical signs such as sore throat, fever, pallor, purpura or jaundice may indicate serious blood disorders. Complete blood counts and urinalysis with careful microscopic examination are recommended frequently during sulfonamide therapy. Clinical data are insufficient on prolonged or recurrent therapy in chronic renal diseases of children under 6 years.

Precautions: Use with caution in patients with impaired renal or hepatic function, severe allergy, bronchial asthma and in glucose-6-phosphate dehydrogenase-deficient indi-



4:30 a.m. Effective through the night. Each dose of Gantanol (sulfamethoxazole) delivers up to 12 hours of antibacterial action against susceptible

pathogens, such as *E. coli*, *Klebsiella-Aerobacter*, *S. aureus* and others. Action all day. And action all night to prevent retained urine from becoming the medium for bacterial proliferation.

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Tablets/Suspension

12 hours of therapy with every dose



viduals. In the latter, dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *allergic reactions:* erythema multiforme (Stevens-Johnson syndrome), skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *gastrointestinal reactions:* nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; and *miscellaneous reactions:* drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities with some goitrogens, diuretics (aceta-

zamide and thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age, except adjunctively with pyrimethamine in congenital toxoplasmosis. Usual dosage is as follows:

Adults—2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection. *Children*—0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, followed by 0.25 Gm/20 lbs *b.i.d.* Maximum dose for children should not exceed 75 mg/kg/24 hrs.

Supplied: Each tablet or teaspoonful (5 ml) of suspension contains 0.5 Gm sulfamethoxazole.



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hydroflumethiazide, 50 mg./reserpine,
0.125 mg./propranolol A, 0.2 mg.

Brief Summary of

Prescribing Information—9-9/22/69.

For complete information consult Official
Package Circular.

Indications: Essential hypertension. Use cautiously in patients with renal insufficiency, particularly if they are digitalized.

Contraindications: Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

Warnings: Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distension, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients. **Use in Pregnancy:** Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss or propranolol A may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy. Stop therapy if propranolol A induces digitalis intoxication.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhosis. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or *bronchial asthma* and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

Adverse Reactions: *Hydroflumethiazide:* Skin rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation. *Reserpine:* Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares. *Propranolol A:* Nausea, vomiting, cardiac arrhythmia, prostration, blurring vision, mental confusion, excessive hypotension and bradycardia. (Treat bradycardia with atropine and hypotension with vasopressors.)

Usual Dose: 1 tablet b.i.d.

Supplied: Bottles of 60, 600, and 1000 scored 50 mg. tablets.

Service items pictured at right and Salutensin samples are available on request from your Bristol Representative or on written request.

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I need—*

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- Guide your eating habits by
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AGE *55* DATE _____

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Salutensin no. 30
Sig: one tablet
twice daily

A. Fox M.D.

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my hypertension
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Plan to be there. See the complete scientific program and registration forms in the October 18th issue of JAMA.

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AMA Clinical Convention
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SYNTHROID THERAPY**

**TWO GOOD REASONS
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SO SMOOTH FOR THE
SYNTHROID PATIENT.**

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Any of the commonly used T₄ thyroid function tests (P.B.I., T₄ By Column, Murphy-Pattee, Free Thyroxine) are useful in monitoring patients on T₄ because they all measure T₄. Patients on SYNTHROID are thereby easy to monitor because their results will fall within predictable, elevated test ranges. Of course, clinical assessment is the best criterion of the thyroid status of the drug-treated patient.

(1) The onset of action of T₄ is gradual. It has a long in vivo "half-life" of over six days. (Occasional missed doses or accidental double-doses are of less concern because of this factor)¹; (2) since SYNTHROID contains only T₄, the potential for metabolic surges traceable to more potent iodides (T₃) is eliminated.

TEST	HYPOTHYROID	SYNTHROID THERAPEUTIC NORMAL
P.B.I.	Less than 4 mcg %	6-10 mcg %
T ₄ By Column	Less than 3 mcg %	7-9 mcg %
T ₃ (Resin)	Less than 25%	27-35%
T ₃ (Red Cell)	Less than 11%	11.5-18%
Free Thyroxine	Less than 0.7 nanograms %	0.7-2.5 nanograms %
Murphy-Pattee	Less than 2.9 mcg %	4-11 mcg %



**AS WITH ANY
THYROID
PREPARATION,
CAUTIOUS
OBSERVATION OF THE
PATIENT DURING THE
BEGINNING OF
THERAPY WILL ALERT
THE PHYSICIAN TO
ANY UNTOWARD
EFFECTS.**

Side effects, when they do occur, are related to excessive dosage. Caution should be exercised in administering the drug to patients with cardiovascular disease. Read the accompanying prescribing information for additional data or write Flint Laboratories.

**Choose
the Smooth
Road ...to thyroid replacement therapy**



PATIENTS CAN BE SUCCESSFULLY MAINTAINED ON A DRUG CONTAINING THYROXINE ALONE.

Thyroxine (T_4) is, as you know, the major circulating hormone produced by the thyroid gland. T_3 is also produced, in smaller amounts, and is active at the cellular level. For years it has been a working hypothesis among endocrinologists that T_4 is converted by the body to T_3 . In 1970 this process, called "deiodination," was demonstrated by Sterling and Braverman². T_4 does convert to T_3 , though the precise quantities are still being studied.

The conversion has been clinically demonstrated during the administration of T_4 to athyrotic patients. Their thyroid status is normalized on SYNTHROID alone, yet the presence of T_3 in these patients has been clearly shown.

WHY DOES SYNTHROID COST LESS THAN SYNTHETIC DRUGS CONTAINING T_3 ?

Very simple. T_3 costs more to make synthetically than does T_4 . So it is economically necessary for a synthetic thyroid medication containing T_3 to cost more than one containing T_4 alone. Synthetic combinations cost patients nearly 50% more than SYNTHROID⁴ because the T_3 costs more to start with; also there is the additional expense of formulating a tablet containing two active ingredients.

1. Latolais, C. J., and Berry, C. C.: Misuse of Prescription Medications by Outpatients, *Drug Intelligence & Clin. Pharm.* 3:270-7, 1969.
2. Braverman, L. E., Ingbar, S. H., and Sterling, K.: Conversion of Thyroxine (T_4) to Triiodothyronine (T_3) in Athyrotic Human Subjects, *J. Clin. Invest.* 49:855-64, 1970.
3. American Druggist BLUEBOOK, March, 1971.

THE FACTS ARE CLEAR AND HERE IS OUR OFFER.

FACTS:

Synthetic thyroid drugs are an improvement over animal gland products. Patients, even athyrotic ones, can be completely maintained on SYNTHROID (T_4) alone. Thyroid function tests are easy to interpret since they are predictably elevated when the patient adheres to SYNTHROID. Of all synthetic thyroid drugs, SYNTHROID is the most economical to the patient.

OFFER:

Free TAB-MINDER medication dispensers to start or convert all your hypothyroid patients to SYNTHROID. Free information to physicians on role of thyroid function tests in a new booklet titled: "Guideposts to Thyroid Therapy." Ask us.

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Zip _____

Indications: SYNTHROID (sodium levothyroxine) is specific replacement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiation, or antithyroid drugs. Indications for SYNTHROID (sodium levothyroxine) Tablets include myxedema, hypothyroidism without myxedema, hypothyroidism in pregnancy, pediatric and geriatric hypothyroidism, hypopituitary hypothyroidism, simple (nontoxic) goiter, and reproductive disorders associated with hypothyroidism. SYNTHROID (sodium levothyroxine) for Injection is indicated for intravenous use in myxedematous coma and other thyroid dysfunctions where rapid replacement of the hormone is required. The injection is also indicated for intramuscular use in cases where the oral route is suspect or contraindicated due to existing conditions or to absorption defects, and when a rapid onset of effect is not desired.

Precautions: As with other thyroid preparations, an overdose may cause diarrhea or cramps, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving the drug should be observed closely for signs of thyrotoxicosis. If indications of overdose appear, discontinue medication for 2-6 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, as Addison's Disease (chronic subcortical insufficiency), Simmonds's Disease (panhypopituitarism) or Cushing's syndrome (hyperadrenalism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarction. **Side effects:** The effects of SYNTHROID (sodium levothyroxine) therapy are slow in being manifested. Side effects, when they do occur, are secondary to increased rates of body metabolism; sweating, heart palpitations with or without pain, leg cramps, and weight loss. Diarrhea, vomiting, and nervousness have also been observed. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. Careful observation of the patient during the beginning of any thyroid therapy will alert the physician to any untoward effects.

In most cases with side effects, a reduction of dosage followed by a more gradual adjustment upward will result in a more accurate indication of the patient's dosage requirements without the appearance of side effects.

Dosage and Administration: The activity of a 0.1 mg SYNTHROID (sodium levothyroxine) TABLET is equivalent to approximately one grain thyroid, U.S.P. Administer SYNTHROID tablets as a single daily dose preferably after breakfast. In hypothyroidism without myxedema, the usual initial adult dose is 0.1 mg. daily and may be increased by 0.1 mg. every 30 days until proper metabolic balance is attained. Clinical evaluation should be made monthly and PBI measurement about every 90 days. Final maintenance dosage will usually range from 0.2-0.4 mg. daily. In adult myxedema, starting dose should be 0.025 mg. daily. The dose may be increased to 0.05 mg. after two weeks and to 0.1 mg. at the end of a second two weeks. The daily dose may be further increased at two-month intervals by 0.1 mg. until the optimum maintenance dose is reached (0.1-1.0 mg. daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.1 mg., 0.2 mg., 0.3 mg., 0.5 mg., scored and color-coded in bottles of 100, 500, and 1000. Injection: 500 mcg lyophilized active ingredient and 10 mg. of Mannitol N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chloride Injection, U.S.P., as a diluent. SYNTHROID (sodium levothyroxine) for Injection may be administered intravenously utilizing 200-400 mcg of a solution containing 100 mcg. per ml. If significant improvement is not shown the following day, a repeat injection of 100-200 mcg. may be given.



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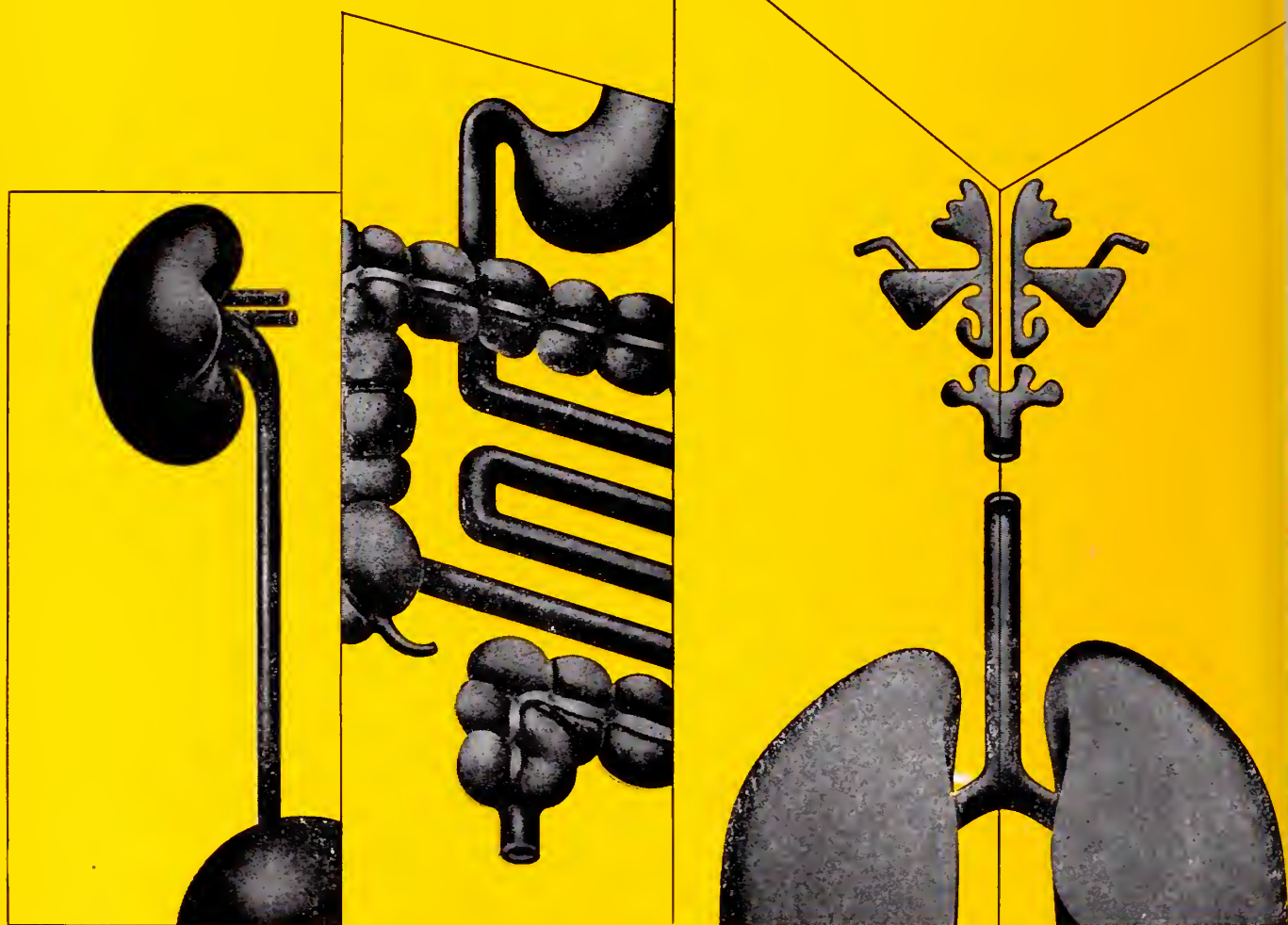
Tract Record.

A record of clinical efficacy in treating bacterial infections of the respiratory, genitourinary and gastrointestinal tracts caused by susceptible strains of pneumococci, *H. influenzae*, staphylococci, streptococci, *Klebsiellae*, *E. coli*, *Enterobacter*, *Shigella*.

A record of years of dependable broad-spectrum activity.

A record of high urine and serum antibiotic levels all with a 500mg. potency, *b.i.d.* convenience and low prescription cost.

Tetrex[®]
bidCAPS[®]
(500mg.
tetracycline
phosphate
complex)



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Indications: Infections due to *Rickettsiae*, *Mycoplasma pneumoniae* (PPLO, Eaton agent), agents of psittacosis, *Lymphogranuloma venereum*, the spirochetal agent of relapsing fever.

Also infections due to Gram-positive and Gram-negative organisms, when bacteriologic testing indicates appropriate susceptibility to the drug.

Contraindications: Hypersensitivity to tetracyclines.

Warnings: Photodynamic reactions have been produced by tetracyclines. Natural and artificial sun-

light should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used and serum estimations may be necessary with prolonged therapy. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood).

Precautions: Mycotic or bacterial superinfection may occur. Cases of gonorrhea with a suspected primary lesion of syphilis should have darkfield examinations before receiving treatment. In all other cases where concomitant

syphilis is suspected, monthly serological tests should be performed for at least 4 months.

Plasma prothrombin levels may be depressed, patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage. In long-term therapy, periodic laboratory evaluation of hematopoietic, renal and hepatic organ systems should be performed.

Adverse Reactions: Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. Infants may develop increased intracranial pressure with bulging fontanels. Hemolytic anemia, thrombocytopenia, neu-

tropenia, and eosinophilia have been reported.

Usual Dose: Usual Adult Dose: One Gm./day in 2 or 4 equally divided doses. Continue therapy for ten days in Group A beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals.

Supplied: Capsules—250 mg. in bottles of 16 and 100. *bidCAPS*—500 mg. in bottles of 16 and 50. A.H.F.S. Category 8:12

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A gratifying announcement about Empirin[®] Compound with Codeine



You may now specify up to five refills within six months when you prescribe Empirin Compound with Codeine (unless restricted by state law).

It is significant in this era of increased regulation, that Empirin Compound with Codeine has been placed in a less restrictive category. You may now wish to consider Empirin with Codeine even more frequently for its predictable analgesia in acute or protracted pain of moderate to severe intensity.

Empirin Compound with Codeine No. 3 contains codeine phosphate* (32.4 mg.) gr. 1/2. No. 4 contains codeine phosphate* (64.8 mg.) gr. 1. *(Warning—may be habit-forming.) Each tablet also contains: aspirin gr. 3 1/2, phenacetin gr. 2 1/2, caffeine gr. 1/2.

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PATIENT	<i>Jacqueline Lewis</i> 24 yrs. <i>850 Howard Ave</i> <i>Staten Island, NY 10301 548</i>															Date					BACTERIOLOGY																			
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the
choice is
clear:

Pyopen[®]
(sterile disodium carbenicillin)

A serious urinary tract infection...

Proteus vulgaris, confirmed by pure culture.

Fortunately, the strain proves sensitive to carbenicillin and the patient is not allergic to penicillins. The choice is clear: Pyopen.

Unlike other antibiotics currently available for the treatment of Gram-negative sepsis, there are no reports of nephrotoxicity or ototoxicity with Pyopen therapy. Particularly valuable in urinary infections, because of its exceptionally high urine levels, its effectiveness against *Ps. aeruginosa* and *Proteus* species has been amply confirmed by clinical experience and microbiologic studies.

Pyopen is a product of Beecham, the company which pioneered most of today's semi-synthetic penicillins. Your Beecham-Massengill representative would like to give you proof of our dedication to the concept of Total Service.

THE TOTAL SERVICE CONCEPT:

Beecham-Massengill's dedication to the concept of total service is exemplified by the Pyopen Program — offering valuable teaching-learning materials and an added measure of personal attention: *Gram-Negative Sepsis*, a multimedia presentation by leading American medical authorities... *A Profile of Pseudomonas*, a monograph for the clinical microbiologist... *24-hour consultation service* in matters relating to carbenicillin (phone: 201-778-9000)... *emergency supply*, a novel plan for assuring the continual availability of Pyopen to hospitals specifying this brand of carbenicillin.

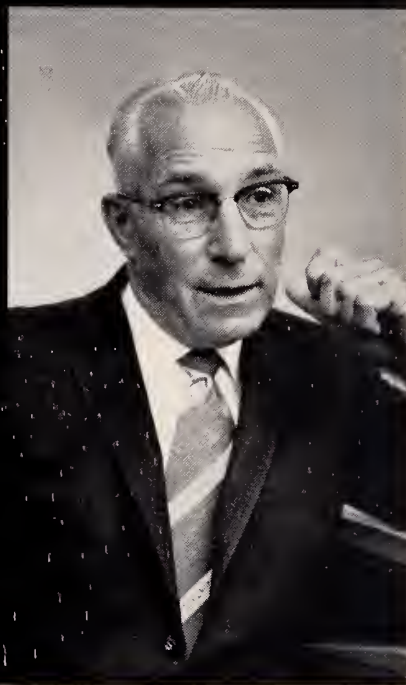
For additional information about the Beecham-Massengill Total Service Concept see our representative or write to us directly.

PRESCRIBING INFORMATION **Indications:** Primarily for treatment of infections due to susceptible strains of *Pseudomonas aeruginosa*, *Proteus* species (particularly indole-positive strains), and certain *Escherichia coli*. Clinical effectiveness has been demonstrated in the following infections when due to these organisms: Urinary tract infections; severe systemic infections and septicemia; acute and chronic respiratory infections (while clinical improvement has been shown, bacteriologic cures cannot be expected in patients with chronic respiratory disease and cystic fibrosis); soft tissue infections. Although PYOPEN (disodium carbenicillin) is indicated primarily in Gram-negative infections, its activity against Gram-positive organisms should be kept in mind when both Gram-positive and Gram-negative organisms are isolated (see Actions). **Note:** During therapy, sensitivity testing should be repeated frequently to detect the possible emergence of resistant organisms. **Actions:** Organisms found to be susceptible *in vitro* include: Gram-Negative Organisms—*Ps. aeruginosa*, *Proteus mirabilis*, *Pr. morganii*, *Pr. rettgeri*, *Pr. vulgaris*, *E. coli*, *Enterobacter* species, *Salmonella* species, *Hemophilus influenzae*, and *Neisseria* species. Gram-Positive Organisms—*Staphylococcus aureus* (nonpenicillinase-producing), *Staph. albus*, *Diplococcus pneumoniae*, Beta-hemolytic streptococci, and *Streptococcus faecalis*. Some newly emerging pathogenic strains of *Herellea*, *Mima*, *Citrobacter*, and *Serratia* have also shown *in vitro* susceptibility. Not stable in the presence of penicillinase. *Klebsiella* species are resistant. Some strains of *Pseudomonas* have developed resistance fairly rapidly. **Contraindications:** Known penicillin allergy. **Warnings:** Serious and occasional fatal hypersensitivity (anaphylactic) reactions have been reported in patients on penicillin therapy. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens. There have been reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, appropriate therapy should be instituted and discontinuance of disodium carbenicillin therapy considered, unless the infection is life threatening and only amenable to disodium carbenicillin therapy. The usual agents (antihistamines, pressor amines, and corticosteroids) should be readily available. **Usage in Pregnancy:** Safety for use in pregnancy has not been established. **Precautions:** As with any other potent agent, it is advisable to check periodically for organ-system dysfunction, including renal, hepatic, and hematopoietic systems, during prolonged therapy. Emergence of resistant organisms, such as *Klebsiella* species and *Serratia* species, which may cause superinfection, should be kept in mind. Each gram contains 4.7 mEq sodium; in patients where sodium restriction is necessary, such as cardiac patients, periodic electrolyte determinations and monitoring of cardiac status should be made. Observe patients with renal impairment for bleeding manifestations and adhere strictly to dosage recommendations. If bleeding manifestations appear, discontinue antibiotic and institute appropriate therapy. As with any penicillin preparation, the possibility of an allergic response, including anaphylaxis, may occur, particularly in a hypersensitive individual. **Administration:** Intramuscular injections should be made well within the body of a relatively large muscle (not into the lower and mid-third of the upper arm), and aspiration is necessary to help avoid inadvertent injection into a blood vessel. May be given by either intravenous injection or intravenous infusion. After reconstitution with Sterile Water for Injection unused portions should be discarded after 24 hours if stored at room temperature, or after 72 hours if refrigerated. **Adverse Reactions:** Hypersensitivity Reactions—Skin rashes, eosinophilia, pruritus, urticaria, drug fever, and anaphylactic reactions. Gastrointestinal Disturbances—Nausea. Hemic and Lymphatic Systems—Hemolytic anemia, thrombocytopenia, leukopenia, neutropenia, in uremic patients receiving high doses (24 gm/day), hemorrhagic manifestations associated with abnormalities of coagulation tests, such as clotting and prothrombin time. Hepatic and Renal Studies—SGOT and SGPT elevations have been observed, particularly in children. To date, no clinical manifestations of renal disorders have been demonstrated. Central Nervous System—Convulsions or neuromuscular irritability could occur with excessively high serum levels. Local Reactions—Pain at the site of injection, sometimes accompanied by induration. Vein Irritation and Thrombophlebitis—particularly when undiluted solution is injected directly into the vein. **How Supplied:** Available in 1 Gm. and 5 Gm. vials.

Before prescribing or administering, see package circular or PDR.

BEECHAM-MASSENGILL PHARMACEUTICALS
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"Drug research gives me the tools that save lives."



A family doctor looks at new developments in the pharmaceutical industry. And he speculates on the future.

When I look back at some of my old records, I'm constantly reminded of the changes that have come about in medicine just during the past twenty-five years. Some of the diseases I treated and prayed over in the '40's are found mostly in medical history books now.

Thanks to drug research and development, we've made substantial gains in the control of cardiovascular disease, diabetes, malaria, mental illness, strep and staph infections, meningitis and a long list of ailments. It seems like only yesterday when a diagnosis of pneumonia was almost the kiss of death. Now, with modern medical techniques and drug therapy, we can offer some real help.

My records on polio, influenza and measles show an unbelievable trend for the better. New vaccines

have reduced the toll of these age-old threats dramatically. And I see patients in pain from crippling arthritis helped with new medicinals unknown just a few years ago.

I hear questions about the three billion or so dollars spent by the drug industry in research during the past ten years . . . working on new and better drug products. It does seem like quite a bit of money to spend, and I realize some of it goes into dead ends. That's the problem with research, any research . . . you often don't know where you're going until you get there. I want all the tools I can get to help my patients. I want more drugs and more effective drugs. If they mean less pain, longer lives and more productive careers for those I treat . . . well, that's what really counts.

*Another point of view . . .
Pharmaceutical Manufacturers
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**when an
unnerving
experience
compounds
the pain**



**the compound analgesic
that calms instead of caffeinates**

In addition to pain, this patient has experienced anxiety, fear, embarrassment, anger, and frustration. It's very likely that these psychic factors actually accentuated his perception of pain. Surely the last thing he needs is an analgesic containing caffeine. A much more logical choice is Phenaphen with Codeine. It provides a quarter grain of phenobarbital to take the nervous "edge" off, so the rest of the formula can control the pain more effectively. It's no accident that the Phenaphen formulations contain a sedative rather than a stimulant. Don't you agree, Doctor, that psychic overlay is an important factor in most of the accident cases you see?

Phenaphen[®] with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital ($\frac{1}{4}$ gr.), 16.2 mg. (warning: may be habit forming); Aspirin ($2\frac{1}{2}$ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg.; Codeine phosphate, $\frac{1}{4}$ gr. (No. 2), $\frac{1}{2}$ gr. (No. 3) or 1 gr. (No. 4) (warning: may be habit forming).

Indications: Provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. *Contraindications:* Hypersensitivity to any of the components. *Precautions:* As with all phenacetin-containing products, excessive or prolonged use should be avoided. *Side effects:* Side effects are uncommon, although nausea, constipation and drowsiness may occur. *Dosage:* Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.

A. H. Robins Company, Richmond, Va. **A-H-ROBINS**



'head clear upon arising'

For upper respiratory allergies and infections including the common cold, Dimetapp Extentabs® effectively relieve the stuffiness, drip and congestion all night and all day long on just one Extentab every 12 hours. For most patients drowsiness or overstimulation is unlikely.

prescribing information appears on next page

A-H-ROBINS

A. H. Robins Company
Richmond, Va. 23220

Dimetapp Extentabs®

Dimetane® (brompheniramine maleate), 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg

Dimetapp Extentabs®

INDICATIONS: Dimetapp Extentabs are indicated for symptomatic relief of allergic manifestations of upper respiratory illnesses, such as the common cold, seasonal allergies, sinusitis, rhinitis, conjunctivitis and otitis. In these cases it quickly reduces inflammatory edema, nasal congestion and excessive upper respiratory secretions, thereby affording relief from nasal stuffiness and postnasal drip.

CONTRAINDICATIONS: Hypersensitivity to antihistamines of the same chemical class. Dimetapp Extentabs are contraindicated during pregnancy and in children under 12 years of age. Because of its drying and thickening effect on the lower respiratory secretions, Dimetapp is not recommended in the treatment of bronchial asthma. Also, Dimetapp Extentabs are contraindicated in concurrent MAO inhibitor therapy.

WARNINGS: *Use in children:* In infants and children particularly, antihistamines in overdosage may produce convulsions and death.

PRECAUTIONS: Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness such as driving an automobile, operating machinery, etc. Patients receiving antihistamines should be warned against possible additive effects with CNS depressants such as alcohol, hypnotics, sedatives, tranquilizers, etc.

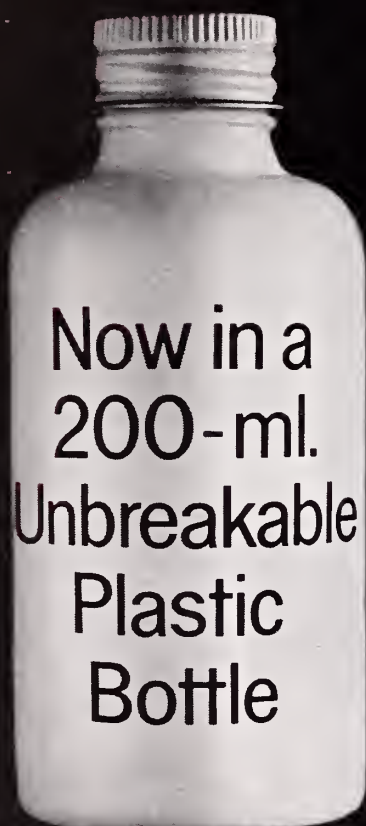
ADVERSE REACTIONS: Adverse reactions to Dimetapp Extentabs may include hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis and thrombocytopenia; drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, hypotension/hypertension, headache, faintness, dizziness, tinnitus, incoordination, visual disturbances, mydriasis, CNS-depressant and (less often) stimulant effect, anorexia, nausea, vomiting, diarrhea, constipation, and epigastric distress.

HOW SUPPLIED: Light blue Extentabs in bottles of 100 and 500.



Still serving...

Miltown®
(meprobamate)



Now in a
200-ml.
Unbreakable
Plastic
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Same price as
150-ml. size *

Two dosage
strengths—
125 mg./5 ml.
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Call in A Specialist

IF THERE IS ANYTHING which the American community of physicians does not need, it is another academy or society of limited interests and talents. Already we are so divided into cliques of identity that we have difficulty remembering that we have a single, common objective . . . the preservation and protection of the health of our patients. The sometimes diverted, often distracting purposes of our categorical, professional associations have seriously constricted our vision and impaired our comprehension of the real problems facing us. We find ourselves working and living in a divided house, diseased with misplaced loyalties.

In view of these facts, it is ironic that the most significant, differentiating characteristic of the physician has not served as the basis for a specialty organization in which the only requirement for membership would be that the candidate be engaged in the full time, private practice of medicine. Such an organization is sorely needed, and now, to represent and speak for the nation's largest, most experienced and best qualified group of experts in health care delivery; the practicing physicians.

Certainly the practicing physician, employed solely by his patients, is a specialist in the truest sense; he limits his professional services to those needed and requested by his patients. He is, indeed, an expert in the practice of medicine; he devotes his life to the delivery of health care at the consumer level. He is the real authority on what his patients need and what they will accept. It is he, rather than his inexperienced, non-practicing colleague who should provide the leadership and counsel for all those groups and individuals working to develop improvements in our health care system.

An "Academy of Private Practice" could effectively bridge the gaps in understanding which presently exist between the pri-

vate practitioner and the employed physician; between the traditional specialist and the non-specialist. It could reduce the friction of the town-gown relationship. It could make invaluable contributions to education in the field of medical arts. It could promote the rapid and efficient adoption of newly developed diagnostic and therapeutic techniques. It could give an authoritarian, expert voice to the consensus of its membership. Ultimately, such an organization could prove, through its work and its accomplishments, that the physician in private practice is neither tainted nor blinded nor motivated by greed. It could prove that the physician in private practice is a conscientious citizen, possessing unique and special skills; genuinely expert in providing medical care.

Membership in the "Academy" would be open only to the physician whose major source of income was his patients' fee-for-service payments. Such provision would cut across lines of all membership requirements for existing professional and specialty groups. It would bring together those physicians sharing a common objective; that of preserving the private practice of medicine; not for themselves alone but for the millions of American citizens, presently mute but dedicated to the same objective. It would, perhaps, find a voice for the silent majority.

If things went well, it could be that some medical college would create a "Department of Medical Practice," designed to better prepare its students to enter the specialty.

That's a lot to hope for.

If things went exceptionally well, it could be that the President of the United States might even appoint an expert in health care delivery to some federal bureau engaged in designing health care delivery systems.

Is that too much to hope for? *MRJ* ☐



The concept of a Health Maintenance Organization (HMO) is still very much in the forefront of discussions with reference to health care delivery. It is still the "darling of the Nixon administration" and a priority item, with emphasis on economy and prevention of disease.

By simple definition HMO is a private or public corporation which will provide comprehensive health service on a per capita pre-paid basis. Physicians, hospitals and insurance companies can organize an HMO if they can satisfy the criteria set down by the Department of Health, Education and Welfare (DHEW). It permits a group of physicians to organize or to be organized thereby complying with the government's desire for group medical practice.

What is the present status of legislation on HMO? Hearings on the HMO bill (S. 1182) were started during the first week in October and are scheduled to continue weekly until mid-November, by Senator Edward M. Kennedy (D-Mass.), Chairman of the Senate Health sub-committee. However, its chances for coming before the Senate for a vote this year are considered remote. The bill itself is a proposal which would provide financial assistance for development of HMO's. In the meantime additional monies above the initial sum of \$2,450,000 are being provided for pilot and experimental programs all over the United States.

Although administration effort is deliberate and concentrated, considerable opposition is encountered. House hearings on the bill may extend well through 1972. Representative Paul G. Rogers, Chairman of the influential House Subcommittee on Public Health and Welfare, maintains that "the benefit that will flow from Health Maintenance Organizations is being oversold." He compares it to the solution offered by Senator Kennedy in his inclusive "cradle to the

grave," "womb to the tomb" program. The Civil Service Commission is also opposing the push of labor groups to give preference to HMO plans in the market of the Federal Employees Health Benefit Program.

What is the attitude to HMO's as far as the chief provider (the physician) of medical care is concerned? In general one might say that its appeal to physicians is minimal. The physicians who are in group clinic practice and those on full-time salaried positions may have no problem in adjusting. Recently such a program has been established for its employees by the Rush-Presbyterian-St. Luke's Medical Center in Chicago. Though not labeled as such, Yale University has developed the Yale Plan offering broad medical coverage to the 30,000 members of its community. This plan is staffed by a team of 25 doctors in group practice and all members of the medical school faculty. House calls are included.

In a poll conducted by Medical Economics, over a third of private practitioners stated that they would refuse to join a group "even if that were the only way they could get reimbursed under a national health insurance system." Obviously, remuneration would not seem to be a major deterrent. Physicians of today are oriented more toward treatment of disease, rather than prevention of disease, and many prefer solo practice. Perhaps the new generation of physicians will be better adapted to HMO practice.

The HMO concept though not new, since HMO-like units have been in operation for 25 years, is supported by evidence for some of the advantages claimed. On the other hand, there is grave doubt by some who have experience, that HMO's as now planned, will fulfill expectations for efficiency, lower costs and better quality medical care. The AMA has adopted a cautious approach. It recommends preliminary studies on cost and utilization and stresses the point that delivery of health care should be guided and controlled by medical personnel, principally the physician. □

Sincerely,

Lucien G. Pasquarelli

Evaluation of the Patient With Chronic Glomerulonephritis

BEN I. HELLER, M.D.

Chronic glomerulonephritis is a disease of diverse etiology. The clinical spectrum is broad. Precise clinical and laboratory evaluation is essential for diagnosis, therapy and prognosis.

DEFINITION

CHRONIC GLOMERULONEPHRITIS as a specific disease entity lacks precise definition, for many of the clinical and histological aspects of the disease are incompletely understood. Given this limitation, we may define chronic glomerulonephritis as a primary glomerular disease characterized by persistent proteinuria and varying degrees of renal dysfunction. Only 20 percent of the cases represent progression from known cases of acute glomerulonephritis.¹ Some of the cases obviously progress from previously unrecognized cases of acute glomerulonephritis. Many of the other cases are probably of diverse etiology. Pathologically, proliferative or membranous glomerulonephritis, or a mixture of both, is noted. The course of clinical events which may lead to

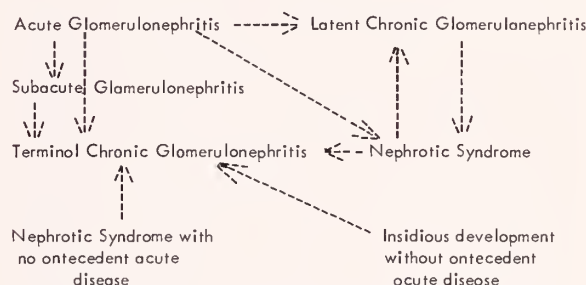


Figure 1. Chronic glomerulonephritis

chronic glomerulonephritis is noted in Figure 1.

PROTEINURIA

The most important hallmark of renal disease which may ultimately lead to a diagnosis of chronic glomerulonephritis is proteinuria. The physician must be cognizant of certain technical and clinical factors which may affect his evaluation of proteinuria. The three most commonly used methods in the clinical laboratory for the detection of proteinuria are the "dip-sticks," sulfosalicylic acid, and heat and acetic acid methods. The former may give rise to a false positive test for urinary protein in a strongly buffered alkaline urine while the latter two methods may yield false negative results. With the sulfosalicylic and heat and acetic acid methods false positive tests may be obtained from large doses of penicillin, tolbutamide, and organic iodides used as contrast media for radiologic studies. The urine volume and concentration must also

This is a continuation of the papers presented during the symposium on "New Challenges in Renal Disease" March 17th, 1971, which was sponsored by the Kidney Foundation of Oklahoma-Southern Kansas, Inc., the Association of the University of Oklahoma Medical Faculty and the Oklahoma Regional Medical Program.

be considered, particularly in evaluating "trace" amounts of protein in the urine. A "trace" of proteinuria in a concentrated urine specimen is probably insignificant whereas a "trace" reading of a dilute urine of large volume is probably indicative of excessive proteinuria—that is, greater than 150 mg. per day.

Transient proteinuria may occur in a variety of circumstances in which there is no primary renal pathology. Among these are febrile illnesses, excessive exercise, exposure to cold, and emotional tension. Patients with congestive heart failure frequently have proteinuria which resolves with the advent of clinical cardiac compensation.

The finding of proteinuria, particularly in adolescents and young adults, may lead to an erroneous diagnosis of chronic glomerulonephritis if orthostatic or postural proteinuria is not considered. In persons with postural proteinuria mild to moderate proteinuria occurs during the day but disappears when the recumbent position is assumed. Although some subjects with postural proteinuria have been found to have focal glomerulonephritis^{2,3} a renal biopsy is not indicated if the diagnosis of postural proteinuria has been unequivocally established.

SYMPTOMS AND SIGNS

In our experience the majority of patients who are later proven by renal biopsy to have chronic glomerulonephritis have experienced an insidious onset of the disease. Many of these patients will be asymptomatic and will come to the attention of the physician because of the finding of proteinuria on a routine urinalysis. Other patients will first present with the uremic syndrome. A young man, a university employee, was recently seen at the University of Oklahoma Medical Center with uremia and severe metabolic acidosis. Although his blood urea nitrogen was 160 mg. per 100 ml., blood pH 7.28, and hemoglobin 7 g. per 100 ml., he had continued to work until two days prior to admission. Moderate hypertension was present. He complained principally of abnormal fatigability and exertional dyspnea of

several weeks' duration. A review of his pre-employment record revealed 3+ proteinuria, hyaline and granular casts, and eight to ten red blood cells per high power field on the routine urinalysis performed three years previously. Unfortunately, these findings were overlooked. After the blood urea nitrogen had been lowered by hemodialysis, a renal biopsy was performed. This demonstrated chronic glomerulonephritis.

Other patients may be noted to have a history of previous episodes of acute glomerulonephritis, of the nephrotic syndrome or of hypertension. The development of the nephrotic syndrome at any stage of the clinical course of chronic glomerulonephritis is a common event.^{4,5} In patients with hypertension it is important to determine, if possible, whether the hypertension preceded or followed the proteinuria. This may sometimes be accomplished by review of previous medical records, pre-employment records, military records or the reports of insurance examinations. It should be noted that the degree of hypertension is extremely variable in patients with chronic glomerulonephritis. Some patients will remain normotensive in spite of severe impairment of renal function. The majority of patients, however, will develop hypertension as renal insufficiency progresses. In some instances fluctuating hypertension may precede the onset of fixed hypertension. Malignant hypertension may occur.

The physical examination, as can be noted from the preceding discussion, may be ex-

Table I

FACTORS IN EVALUATION OF UREMIC SYNDROME

1. Electrolyte and water metabolism, dehydration, overhydration with therapy, metabolic acidosis, hypopotassemia, hyperpotassemia.
2. Cardiopulmonary disorders, hypertension, pulmonary edema, congestive heart failure, pericarditis.
3. Gastrointestinal disorders—nausea, vomiting, diarrhea, bleeding.
4. Disorders of mineral metabolism.
5. Anemia and bleeding phenomena.
6. Infections.
7. Neurologic disorders, encephalopathy, neuromuscular irritability, convulsions, muscle weakness and cramps, peripheral neuropathy.
8. Effects of antibiotics, drugs
 - Penicillin (large doses)—convulsions
 - Kanamycin—nephrotoxicity, ototoxicity, curare effect
 - "Compazine"—Parkinsonism
 - Immunosuppressants—Opportunistic infections

tremely variable. In patients with latent chronic glomerulonephritis the physical examination may be completely negative. Edema, varying from mild to the anasarca of the nephrotic syndrome, may be noted. Hypertensive retinopathy and various manifestations of hypertensive cardiovascular disease, including full-blown congestive heart failure, may be seen. In patients with severe renal insufficiency the familiar pattern of symptoms and signs of the uremic syndrome, with multiple system involvement may become apparent.⁶ Some of the factors which require constant and meticulous evaluation by the physician are noted in Table I.

LABORATORY STUDIES

The principal laboratory finding in chronic glomerulonephritis, and essential to the diagnosis, is persistent proteinuria. This finding, plus the demonstration of hyaline and granular casts, may be the only positive laboratory test in patients with chronic latent disease. Active glomerular inflammation is manifested by varying degrees of hematuria and the finding of leukocytes and renal epithelial cells in the urine. Red blood cell casts may be noted. A careful microscopic urinalysis, although not providing pathognomonic evidence for chronic glomerulonephritis, is indicated in every patient. Unfortunately in these days of dipsticks and automation, a carefully performed microscopic urinalysis is difficult to obtain in many hospitals.

The most useful clinical laboratory test for assaying renal function (glomerular filtration rate) is the creatinine clearance. A baseline having been established in a given patient, the creatinine clearance is also use-

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Table II
CHRONIC GLOMERULONEPHRITIS
DIFFERENTIAL DIAGNOSIS

1. Essential Hypertension with Arteriolar Nephrosclerosis
2. Intercapillary glomerulosclerosis
3. Lupus glomerulonephritis
4. Chronic pyelonephritis
5. Renal amyloidosis
6. Hereditary nephritis
7. Polyarteritis nodosa
8. Hypersensitivity vasculitis
9. Idiopathic nephrotic syndrome

ful in following the clinical course of the disease. Technically, the measurement of serum and urinary creatinine offers no serious problems. Clinically, errors are caused by inaccurate collection of timed urine specimens. Proper instruction of patients and hospital and clinic personnel is essential for the avoidance of such errors.

Minimal investigation of a patient with primary renal disease should include the hemogram, erythrocyte sedimentation rate, urinalysis, 24 hour urinary protein excretion, urine culture, blood urea nitrogen, serum creatinine, creatinine clearance, x-ray film of the chest, and intravenous pyelography. With the advent of renal insufficiency, determinations of serum and urinary electrolytes, arterial blood pH, serum calcium and phosphorus, and serum alkaline phosphatase may help to clarify the clinical status.

The most common diseases which must be differentiated from chronic glomerulonephritis are noted in Table II.

In most instances the history, physical examination, laboratory studies, and natural history of the disease provide adequate data for making an accurate differential diagnosis. Whenever a definitive diagnosis cannot be made, a renal biopsy is indicated. The renal biopsy is also useful in following the results of therapy and in evaluating the prognosis.

SUMMARY

Chronic glomerulonephritis is characterized by persistent proteinuria and varying degrees of renal dysfunction. Some of the cases evolve from acute glomerulonephritis while others are of diverse etiology. Some of the clinical and laboratory features of the

disease which are essential for proper evaluation of the patient have been discussed. □

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Diet Therapy of Uremia

B. J. MATTER, M.D.

*People with renal failure need not die.
Rehabilitation is impossible without
effective diet management.*

DIALYSIS ALONE does not effectively control uremia. Dietary management, therefore, remains a keystone in the treatment of renal failure aimed at minimizing metabolic derangements. Therapy must be individualized depending upon the type of renal disease, degree of renal failure and accompanying illnesses. Improved metabolic balance in the uremic individual requires knowledge of fluid, sodium, potassium, protein and caloric dietary manipulation.

FLUID BALANCE

Lack of knowledge regarding fluid balance in patients with renal failure was formerly the greatest single factor responsible for the high mortality of patients suffering from acute renal failure.¹ Schreiner and Berman² emphasize that overhydration during oliguria is caused by two factors. The first is delayed recognition of the renal failure and the second is failure to appreciate the large amount of endogenous water produced by the metabolism of food and body

tissue. In patients with acute oliguric renal failure, fluid intake must be sharply restricted during the period of low urine output.

The problem encountered with fluid balance in individuals with chronic renal disease is different. Urinary concentrating ability is lost early, requiring greater amounts of fluid intake to eliminate the daily accumulation of waste products. Late in the course of chronic renal failure the ability to dilute the urine is also lost. This results in urine volumes and concentrations which are fixed within narrow limits. Thus, with chronic uremia an optimum fluid intake for each patient must be established.

In either acute or chronic renal failure 400 ml of fluid should be administered daily to replace normal insensible water loss, allowing for endogenous water production. Additional fluid will be required to replace the previous day's measurable fluid loss from gastric suction, vomitus, urine, wound drainage and so on.

The physician must also consider the additional fluid required by the febrile patient. For each rise in body temperature of 1°F, a ten percent increase adjustment is made in the insensible water loss. Valuable guides to estimating fluid balance are daily body weight, serum sodium levels and central venous pressure recordings. When possible, fluid should be given by mouth. The patient with acute oliguria is expected to have a daily weight loss of one pound when proper-

ly managed. During oliguria, any weight gain reflects fluid retention.

SODIUM BALANCE

During the acute oliguric phase, sodium intake should be restricted to 0.5 Gm. daily. The patient with chronic renal failure cannot long endure this rigid sodium restriction since renal conservation of sodium is impaired. Most patients with chronic renal failure tolerate a two Gm. sodium diet, while greater restrictions will limit the variety of food allowed. Excessive restriction of sodium intake will tend to produce decreased vascular volume, further diminution of renal blood flow, and subsequent increased retention of metabolic waste products.

Hyponatremia usually results from excessive dilution with water. Unless one is dealing with the less usual patient with actual sodium depletion, the physician's attempt to correct hyponatremia with salt administration usually results in excessive hydration and pulmonary edema. The usual treatment of hyponatremia is water restriction.

POTASSIUM BALANCE

Potassium intoxication is the leading biochemical cause of death in patients with acute renal failure.³ Protein catabolism results in the release of cellular potassium into body fluids. The metabolic acidosis of renal failure also encourages potassium to accumulate in the extracellular space. Serum potassium must be closely monitored and controlled during acute episodes and potassium intake must be restricted. High potassium foods such as raisins, bananas, coffee and citrus fruits and juices should be avoided. Food additives, particularly salt-substitutes containing potassium, must be continually discouraged.

Preventive dietary therapy is essential to prevent the life-threatening complication of hyperkalemia in individuals with chronic failure. These individuals will receive a diet containing minimal potassium if protein, fresh fruits and other high potassium foods are restricted. Protein restriction also minimizes acidosis by decreasing ingestion of acidic substances.

Table I

SAMPLE DIETARY THERAPY OF CHRONIC RENAL FAILURE

Sodium	2 Gms./day (7 Gm. salt)
Potassium	2 Gms./day (60 mEq)
Protein	20 to 60 Gm./day
Calories	2500/day (minimum)
Fluid	measured output plus 400 ml

PROTEIN AND CALORIES

The influence of dietary protein on the blood urea levels has been long recognized. Restriction of protein intake will diminish the rate of rise of the blood urea concentration and often will cause a fall, with stabilization at a lower level. A low protein intake can be tolerated for a prolonged period and such low protein diets are of value not only because of their effect on the blood urea concentration but also because accumulation of the other end-products of protein catabolism is prevented.

Borst, Bull and colleagues stressed the importance of high calorie, low protein intake in the management of patients with acute renal failure.⁴ Their regimen minimized the exogenous protein loss and had the advantage of the so-called "protein-sparing" effect of carbohydrates. This diet, consisting of carbohydrates and fats, has been implemented in the form of "butterballs" in many hospitals—balls of sucrose and butter. Such a program, in the long term management of a patient who may live for years, will result in a negative nitrogen balance and eventually lead to malnutrition. The goal of dietary therapy is to limit protein intake to an amount that reduces acidosis and azotemia but will prevent protein breakdown and maintain nitrogen balance.

In patients with severe renal failure, the use of peritoneal dialysis and a rigid degree

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of protein restriction, such as the diet advocated by Giovannetti,⁵ should be instituted. The introduction of this diet was based on the observation of Giordano⁶ that, if nitrogen intake is reduced to below two grams, endogenous urea is metabolized to form non-essential amino acids. A modification of this diet more palatable for long-term therapy has been devised^{7,8} and provides a protein intake of 18 Gm. per day. Unfortunately, ordinary bread cannot be included and special bread is prepared from wheat starch (Paygel flour, General Mills, Battle Creek, Michigan and Resourch Baking Mix, Doyle Pharmaceutical Company, Minneapolis, Minnesota). The wheat-starch bread may not be readily acceptable to some patients, but otherwise the diet is well-tolerated. The caloric value is varied according to appetite, as long as sufficient calories are provided for the protein-sparing effect.

The use of a low-protein diet necessitates that the protein be of "high biological quality." This protein must contain essential amino acids in sufficient quantity to maintain body tissues and a positive nitrogen balance. Excess amino acids which cannot be incorporated into tissue proteins are deaminated causing the BUN to rise. Non-essential amino acids will be metabolized from endogenous urea if sufficient essential amino acids are provided. Therefore, proteins containing a high percentage of the essential amino acids, i.e., high biological quality proteins, must be used.

Providing renal failure is not too far advanced, restriction of protein intake to 30 to 40 Gm. daily will often result in stabilization of the blood urea concentration and restore a sense of well-being to the patient.

OTHER FEATURES OF DIET THERAPY

The diet given a patient with renal failure is commonly vitamin deficient. Daily multivitamin supplements should be given. Moreover, patients undergoing prolonged

Table II

LOW PROTEIN DIETS

Should contain as little protein as possible
Should not induce protein depletion
Uremic patients - 0.3 Gm. protein/Kg./day
60% from milk, meat, eggs
Dialysis patients - 1.0 Gm. protein/Kg./day containing
essential amino acid requirements

peritoneal dialysis may require parenteral injections of vitamin K and water soluble vitamins including B₁₂.⁹

The serum chloride level usually reflects the serum sodium level and the degree of metabolic acidosis. In general, hypochloremia requires no specific treatment.

Electrolyte disorders of calcium and phosphorus do not usually require specific treatment in acute renal failure. Hypocalcemia is rare; when present it is rarely the cause of seizures, tetany, or muscle spasms. Hyperphosphatemia occurs late in the course of acute renal failure and in chronic renal failure. Aluminum hydroxide gels administered orally (15 to 30 ml four times daily) will bind phosphate in the gut. This will assist in maintaining plasma calcium levels.

Plasma magnesium levels are commonly elevated due to impaired clearance of magnesium¹⁰ in patients with renal failure. The dangers of absorption from epsom salt purgation and from magnesium containing aluminum hydroxide gels in patients with chronic renal failure have been reported.¹¹

SUMMARY

Diet therapy is an essential part of the management of renal failure, even following institution of dialytic therapy. The proper management of fluid, sodium, potassium, protein and calories is essential to maintain life and to permit rehabilitation of the patient with renal failure. □

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Corticosteroid and Immunosuppressive Therapy of Idiopathic Nephrotic Syndrome

ROBERT D. LINDEMAN, M.D.

Urinary protein loss exceeding three Gm. daily without systemic disease, i.e. primary renal disease, defines idiopathic nephrotic syndrome. Morphology is variable and prognosis with or without therapy (corticosteroids, immunosuppressives) varies with initial morphology.

THE TREATMENT of idiopathic nephrotic syndrome, defined as any primary renal disease producing proteinuria persistently exceeding three grams protein loss per day, is largely empirical. Many regimens have been proposed and utilized. Analysis of the literature is extremely difficult because of unpredictable variations in the clinical course of both treated and untreated cases. Most studies report results of only a single treatment schedule and have no matched control or untreated group. Furthermore, there is often a failure to document precisely the clinical history of the patients treated, the morphologic characteristics of the renal lesions and the subsequent course of the patients while on therapy. Before initiating any form of therapy, it is important to establish a morphologic diagnosis by renal biopsy. In certain secondary renal lesions due to underlying metabolic disor-

ders (diabetic glomerulosclerosis, amyloidosis), corticosteroid therapy would be contraindicated. In some cases of idiopathic nephrotic syndrome, such as rapidly progressive glomerulonephritis or chronic sclerosing glomerulonephritis, steroids should probably not be utilized as the chance of obtaining any favorable benefits is outweighed by the potential complications of steroid therapy.

Before any analysis can be made of results of any form of therapy, a definition of the renal lesions under therapy needs to be made. Table I lists a morphologic classification of idiopathic nephrotic syndrome (INS). Figure 1 shows what appears to be a normal glomerulus on light microscopy. This would be classified as lipoid nephrosis or a minimal change lesion. On electron microscopic examination, the only changes seen are a flattening and fusion of the foot processes of the epithelial cells. Figure 2 shows a membranous glomerulopathy with thickening of the basement membrane. On electron microscopy, densities similar in appearance to basement membrane are de-

Table I
MORPHOLOGIC CLASSIFICATION OF IDIOPATHIC NEPHROTIC SYNDROME

1. Minimal change and lipoid nephrosis
2. Membranous glomerulopathy
3. Proliferative glomerulonephritis
 - A. Acute diffuse, exudative
 - B. Lobular
 - C. Membranoproliferative (mixed)
 - D. Rapidly progressive
 - E. Chronic sclerosing

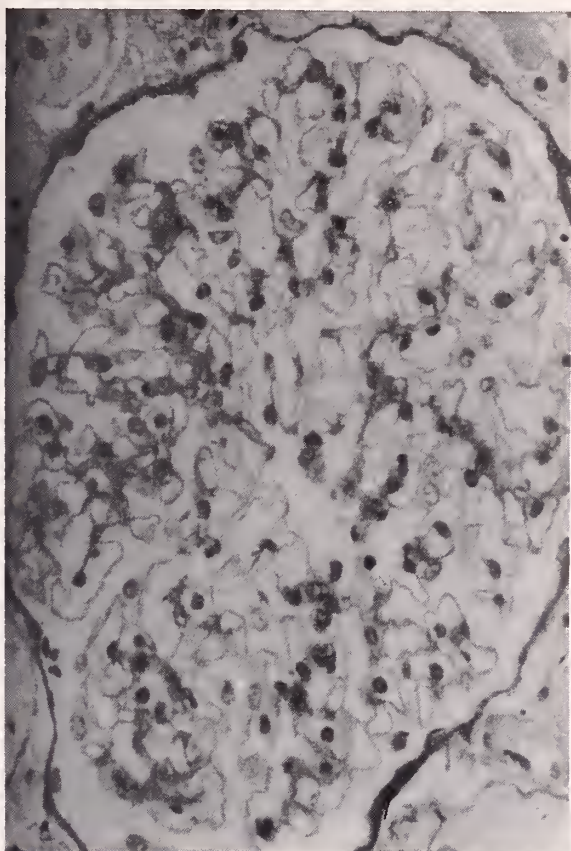


Figure 1. Patient with nephrotic syndrome and nearly normal glomerulus (PAS stain). One might question whether there are focal increases in mesangial cells but otherwise it is within normal limits. This would be called minimal change glomerulonephritis.

posited in and adjacent to the basement membrane. Figure 3 shows an acute diffuse proliferative and exudative glomerulonephritis with an increase in mesangial cells and mesangial cell matrix. Lobular glomerulonephritis is a variant with increased mesangial deposits producing a lobular appearance in the glomeruli. Many patients show

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Table II
RESPONSE OF PATIENTS WITH NEPHROTIC SYNDROME TO TREATMENT WITH STEROIDS (Ross, Third International Congress of Nephrology Proceedings, 1966, p. 108).

Histology	Total Cases	Re-mission	% Re-mission
16 Series (1956-1966)			
Undifferentiated	288	52	18%
6 Series (1960-1966)			
Minimal Change	59	35	60%
Membranous	60	3	5
Proliferative	95	14	15
Total	214	54	25%

both membranous and proliferative changes or a mixed lesion. Figure 4 shows a rapidly progressive glomerulonephritis with layers of epithelial cells or "crescents" compressing the existing glomeruli to the point that they become non-functional. Finally, there is the chronic proliferative or sclerosing glomerulonephritis.

Treatment of INS with ACTH and corticosteroids dates back to 1950. Numerous studies utilizing cortisone, prednisone and

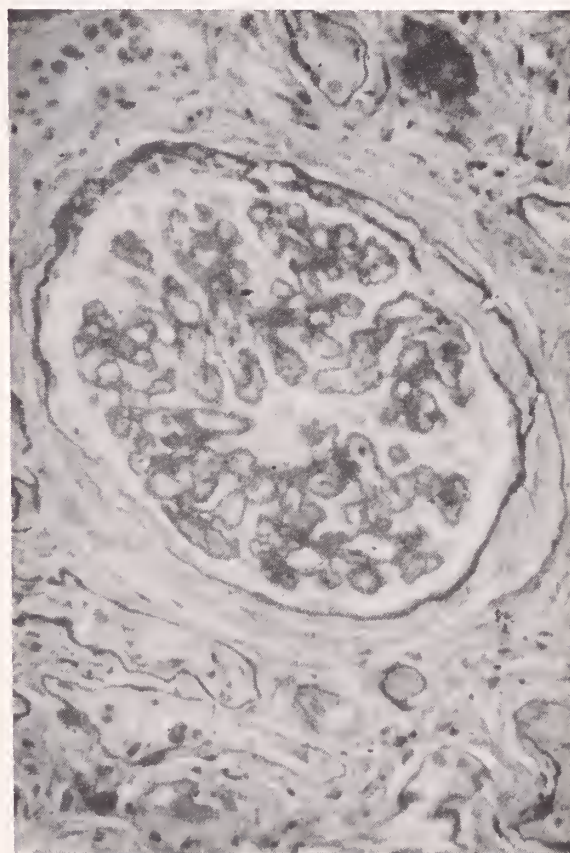


Figure 2. Membranous glomerulopathy (PAS stain). Compare the thickness of the basement membrane with that seen in Figure 1. There is no evidence of hypercellularity.

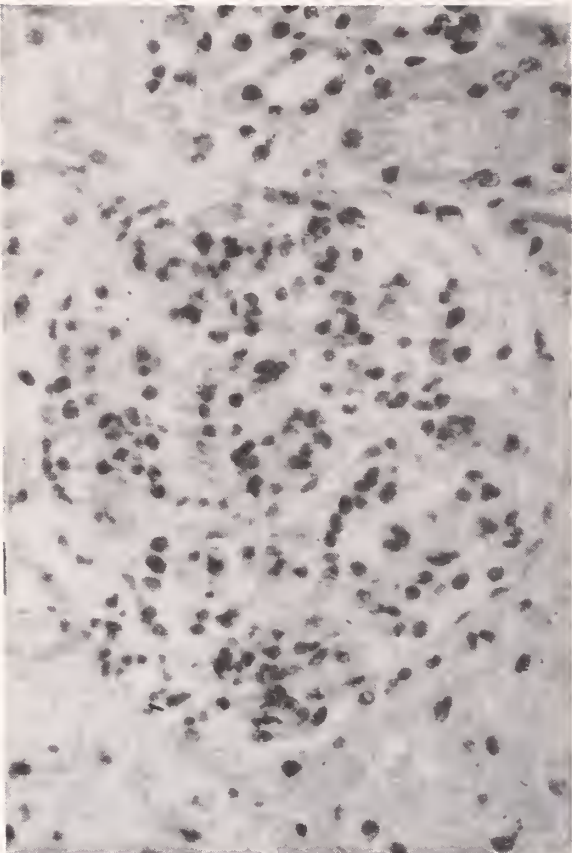


Figure 3. Active proliferative glomerulonephritis (H & E stain). Note the hypercellularity compared to Figure 1. There also is a tendency to obliterate Bowman's space by the increased bulk of the glomerular capillary loops.

almost every one of the newer steroids have been conducted with diverse suggestions about dosage, duration of therapy, continuous vs. interrupted therapy, and the use of histologic features as an indication for therapy. Since INS in adults is a chronic disease with a poorly defined natural history and a tendency towards spontaneous remission, it is difficult, if not impossible, to evaluate the effect of any therapeutic regimen without an untreated control group.

Ross¹ has summarized the experience to 1966 in a report to the Third International Congress of Nephrology (Table II). In 16 studies reported between 1956 and 1966, there were 288 cases of INS treated with corticosteroids with 52 remissions as evidenced by disappearance of proteinuria. This is a remission rate of 18 percent. No attempt was made to correlate response with renal histology in this analysis.

Table III

EFFECT OF LONG TERM STEROID THERAPY ON COURSE OF IDIOPATHIC NEPHROTIC SYNDROME (Miller, et al. Amer. J. Med., 46: 919, 1969)

Histology	Complete Remission	Partial Remission	No Response
Minimal lesion	7	3	1
Membranous	2	2	8
Proliferative	4	7	7
Mixed	2	2	3
No Biopsy	10	3	6
Total	25	17	25
This Study	Remission 68	% Remission 34%	
Steroid Therapy			
(13 reports)	349	25%	
Untreated (8 reports)	217	18%	

In a smaller series of six reports where histology was correlated with results, the best results, as might be anticipated, were seen in the patients with minimal lesions where the remission rate was 60 percent. In both membranous and proliferative forms of glomerulonephritis, the remission rate was much lower.

Miller,² et al. reported the results of long-term steroid therapy in 68 patients followed for a mean period of 5½ years (Table III). They found 25 patients (37 percent) developed remissions; 12 (18 percent) had complete remissions on the initial course of steroids; four (six percent) additional patients responded but proteinuria reappeared with each attempt to decrease steroids; and, nine patients (14 percent) had what appeared to be spontaneous remissions after steroids had been stopped for at least three months.

This group reviewed 13 preceding reports in which steroids were utilized and computed a remission rate of 25 percent. However, in a series of eight additional reports, they also found a spontaneous remission rate of 18 percent.

Although there does not appear to be much difference in remission rates between steroid-treated and untreated patients, other measures of benefit also need to be considered. For example, the mortality rate from renal insufficiency over the period of observation in this study was only 22 percent compared to a mortality rate in untreated patients in other studies, approximating 50 percent.

Additional evidence that corticosteroids have a direct effect on the course of INS, at least in some cases, is provided by the phe-

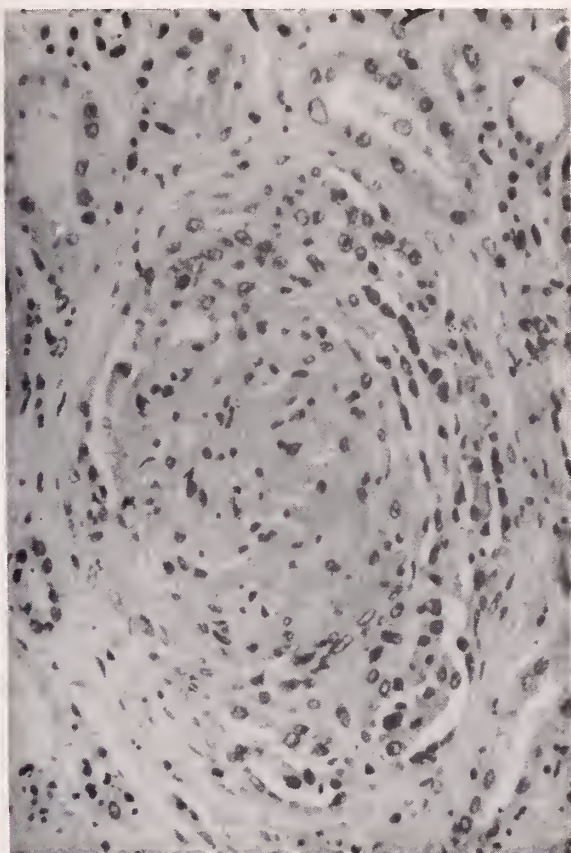


Figure 4. Rapidly progressive glomerulonephritis (H & E stain). The glomerular capillary tufts are compressed in the center one-third of the glomerulus and are not hypercellular. The remaining two-thirds of the glomerulus consists of layers of epithelial cells or crescents.

nomenon of steroid dependency, *i.e.*, the observation that proteinuria recurs in patients in remission when steroids are tapered. Furthermore, reinstitution of steroids often produces another remission.

Nevertheless, only a prospective, controlled study can provide definitive information on the value of steroid therapy. The Medical Research Council of Great Britain is the only group with such a study currently underway; however, the significance of their findings may be limited by the fact that they are using dosage levels of prednisone (20 to 40 mg. daily) felt to be less than optimal by many investigators.

The incidence of complications resulting from high dose steroid therapy appears to be formidable and sometimes it appears that the treatment is worse than the disease. Most of the complications, such as diabetes, hypertension, gastrointestinal ulceration and

bleeding, infections, often with unusual organisms, and psychosis, have occurred when steroids have been administered on a daily basis for long periods of time. Most recent investigations have utilized intermittent or alternate day therapy with a much reduced incidence of complications. Since intermittent therapy appears to be as effective as continuous therapy, there appears to be no reason to continue use of daily steroid therapy.

Much attention has centered recently on the use of immunosuppressive agents in the treatment of INS. The rationale for use of immunosuppressive therapy is based on two assumptions. First, the disease under treatment is a result of antigen-antibody interactions or immunoinflammatory reactions. Actually, antigen-antibody complexes are harmless until they combine with complement at which time direct tissue injury or cytotoxicity occurs. Furthermore, the total complex may produce indirect injury by producing a delayed hypersensitivity reaction. The second assumption is that the drugs will act favorably on the disease by reducing antibody synthesis.

There is much evidence that some forms of INS are a result of immunoinflammatory disease. The ability to demonstrate circulating antibody to renal tissue in the serum, the appearance of low serum complement levels and the demonstration of gamma globulin and complement in the renal lesions are all supportive of this concept. Furthermore, experimental models in animals have been developed showing the ability of kidney antigen, or more specifically glomerular basement membrane antigen, to produce antibody in unrelated animals. This anti-kidney antibody injected back into the original animal produces a nephritis with features common to human glomerulonephritis.

The evolution of immunosuppressive therapy has resulted primarily from searches for effective cancer chemotherapeutic agents and for means of preventing rejection reactions after homotransplantation. In order to understand how immunosuppressive agents work, it is necessary to understand how antibody formation is stimulated and suppressed since this is the component of the immune mechanism altered (Figure 5). Antigen, such as glomerular basement

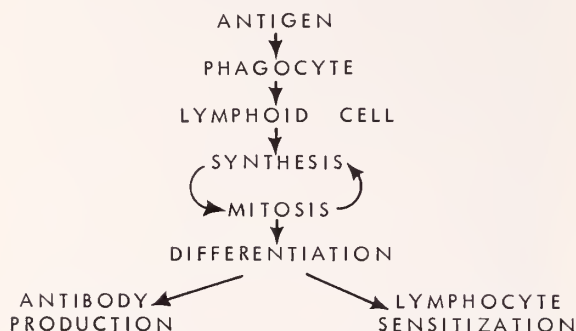


Figure 5. Schematic steps in the antigenic stimulation of antibody synthesis by small lymphocytes and lymphocyte sensitization or hypersensitivity reactions by large lymphocytes. See text for details.

membrane, is ingested by phagocytes which break it down and transfer either modified antigen or informational macromolecules to lymphoid cells. These lymphoid cells then proliferate repeatedly, synthesizing the required nucleic acids, DNA and RNA before each division. The newly formed, immature cells differentiate to form either mature, antibody-producing cells or activated lymphocytes that can mediate delayed hypersensitivity or homograft rejection reactions.

The benefits of immunosuppressive drugs in the treatment of nephrotic syndrome were apparent as long ago as 1949 when nitrogen mustard was first used. Today, the two drugs which have been primarily utilized are azathioprine ("Imuran")[®] and cyclophosphamide ("Cytosan")[®]. Azathioprine, an analogue of 6-mercaptopurine, is the major drug utilized in prevention of rejection reactions following transplantation, a well-defined immunoinflammatory process. It appears, at any therapeutic level, to produce less bone marrow toxicity than 6-mercaptopurine. This agent suppresses antibody production by inhibiting nucleic acid, DNA and RNA synthesis and thereby decreasing cell division of antibody-producing lymphocytes. "Cytosan" is an orally administered analogue of nitrogen mustard which is non-toxic until it enters the cell where phosphamidases split off a side chain leaving nitrogen mustard. This agent then produces the therapeutic benefits of nitrogen mustard without the problems associated with admin-

Table IV
PERCENT CHANGE IN RENAL FUNCTION AFTER
6 MONTHS ON AZATHIOPRINE
INITIAL GFR > 40 CC/MIN

Diagnosis	Total Patients	<-20%	-20 to 0%	0 to +20%	>+20%
Lupus GN	12	0	1	5	6
Proliferative GN	10	2	1	3	4
Membranoproliferative GN	14	0	5	3	6
Membranous GN	1	0	0	1	0
RPGN	1	1	0	0	0
Diabetic GS with GN	1	1	0	0	0
Total	39	4	7	12	16

istration of the latter.

There are now a number of uncontrolled studies including our own which appear to show a beneficial effect from combined azathioprine or cyclophosphamide plus steroid therapy. Two studies published in 1967 stimulated our interest in use of azathioprine and steroid therapy.^{3,4} Both reported use of azathioprine plus large doses of steroids in a population of patients with nephrotic syndrome who had received a course of large dose steroid therapy without a clinical remission. Michael,³ *et al.* reported good results, as evidenced by decreased proteinuria and increased creatinine clearances, in 19 of 28 patients with lupus nephritis and idiopathic nephrotic syndrome. Adams⁴ and associates reported a similar study in an adult population with good results reported in eight of 19 patients. In general, adult populations have shown less impressive results compared to studies including children.

We initiated a study at the University of Oklahoma Medical Center in May 1967 to (1) expand the experience with the use of azathioprine and (2) determine if its combination with low-dose steroids, generally 20 mg. prednisone every other day, would produce comparable improvement in renal function yet avoid the complications of prolonged high dose steroid therapy. Sixty-six patients with steroid-unresponsive lupus nephritis and idiopathic nephrotic syndrome have been entered into the study. All had received at least a four to six week trial of large doses of steroids unless initial renal function tests were so poor that the risk involved was felt unwarranted. Those patients with initial inulin clearances above 40 cc/

minute have shown more favorable responses than those with initial clearances below this mark. Table IV shows the results of therapy in 39 patients with initial inulin clearances above 40 cc/minute. Twenty-eight (72 percent) followed with repeat inulin clearances after six months on therapy showed a clearance that was above their pre-treatment level; 16 (41 percent) showed an increase of greater than 20 percent. Thirteen of these patients had a clinical remission as defined by inulin clearances greater than 100 cc/min. and 24-hour urinary protein excretions less than one gram. Table V shows the results of followup renal function tests in 14 patients with initial clearances below 40 cc/min. Only four of 14 of these patients showed clearances, after six months on therapy, that were above the initial clearance values.

There have been three non-renal deaths in this study to date and 11 patients have developed progressive renal failure with death or acceptance onto the maintenance dialysis-transplantation program. The three non-renal deaths were due to acute pancreatitis, acute lower lobe pneumonia following influenza and primary pulmonary hypertension in a patient with lupus nephritis. The complications usually associated with high dose steroid therapy have been avoided. Infections and malignancies have not presented a problem in this group of patients. Hepatotoxicity, pernicious vomiting and evidence of bone marrow suppression have been recognized and managed appropriately without sequelae.

Although we strongly suspect that these patients have done better than a similar

group of untreated patients would have done, we do not have the necessary control group to document this. Currently, a group of medical centers in the Southwest is developing a multicenter controlled study to compare three treatment regimens: 1) azathioprine, 2) alternate day, high dose prednisone, and 3) symptomatic therapy. Hopefully, this kind of study will provide some documentation as to the optimal forms of therapy for patients with idiopathic nephrotic syndrome. The evidence already is probably too strong to justify symptomatic therapy alone for the group with lupus nephritis so they will not be included in this study.

Until answers are available as to the appropriate therapy in each morphologic variety of idiopathic nephrotic syndrome, some guidelines are needed. From our experience and from what is now available in the literature, my recommendations are as outlined:

1. *Minimal lesion (lipoid nephrosis).* Prednisone 60 mg. per day for one to two weeks; then every other day for six weeks. If a remission occurs, this dosage can be tapered to the lowest dose tolerated without recurrence of proteinuria. If no remission occurs, alternate day steroid therapy may be continued up to four months or cyclophosphamide ("Cytoxan"®) can be started in dosages of two to three mg/Kg/day.
2. *Proliferative, membranous or mixed lesions.* If the BUN is less than 40 mg%, the same prednisone dosage schedule as above can be used for six weeks. A remission would be handled by tapering prednisone as above. If no remission occurred, prednisone should be tapered to 20 mg. every other day and azathioprine or cyclophosphamide started in doses of two to three mg/Kg/day. If the initial BUN is greater than 40 mg%, symptomatic therapy only is indicated.
3. *Rapidly progressive glomerulonephritis.* Symptomatic therapy only is indicated.

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Table V
PERCENT CHANGE IN RENAL FUNCTION AFTER
6 MONTHS ON AZATHIOPRINE
INITIAL GFR < 40 CC/MIN

Diagnosis	Total Patients	> -20%	-20 to 0%	0 to +20%	> +20%
Lupus GN	1	0	0	0	1
Suspected Lupus GN	4	1	1	0	2
Proliferative GN	5	4	0	0	1
Membranoproliferative GN	1	0	1	0	0
Membranous GN	1	0	1	0	0
RPGN	1	1	0	0	0
Insufficient Biopsy	1	1	0	0	0
Total	14	7	3	0	4

J. Wenzl, M.D., Robert G. Bottomley, M.D., George Psimenos, M.D., and William O. Smith, M.D., in the conduct of the study cited in the text. He also wishes to acknowledge the support provided by the Presbyterian Hospital Research Fund and the Clinical Research Center, Children's Memorial Hospital which has made it possible to follow non-veteran patients in this study. ☐

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Special note—Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen and Demulen are indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality conducted in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain^{1,2} leading to this conclusion, and one³ in this country. The estimate of the relative risk of thromboembolism in the study of Vessey and Doll² was about sevenfold, while Sartwell and associates⁴ in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Ovulen and Demulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen or Demulen. Therefore, if such tests are abnormal in a patient taking Ovulen or Demulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because

these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen or Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen or Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen or Demulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen or Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X, thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T³ uptake values, metyrapone test and pregnanediol determination.

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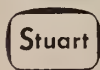
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Medicine in the Union Armies

VIRGINIA R. ALLEN

*Of the 360,000 Union Army deaths,
only 110,000 resulted from enemy fire.
Losses from warfare with microorgan-
isms far exceeded losses from
battle with the enemy.*

THE MORNING OF July 21, 1861, began with the sun bright and exceptionally warm—like many other summer mornings in Virginia. The Army of the Potomac, 30,000 strong, had left Washington five days before, marching the twenty-seven miles to Centreville, Virginia. That morning, the army which approached the meandering little stream of Bull Run was exhausted from the rapid pace of the march from Centreville and because many troops had missed supper the previous evening, and most had missed breakfast. In addition, water was scarce and many men limped painfully with feet literally raw from new shoes which were issued the day before they left Washington. The First Battle of Bull Run began at ten o'clock and for a while the Army of the Potomac seemed to be winning. Confederate reinforcements arrived in the afternoon and the Union troops began a disorderly flight toward Washington leaving behind 2,000

killed and wounded. In the aftermath, chaos piled horror upon horror. Ambulance drivers ran in panic and ambulances were commandeered by other troops. Some wounded performed incredible feats of walking or crawling in the retreat and a lucky few were picked up by good Samaritans with springless wagons. The wounded who made it to Washington found the few hospitals filled beyond capacity and many wandered the streets knocking on doors seeking help. Back on the battlefield the living writhed among the dead with most of their cries for help unanswered for some time, if at all. Make-shift hospitals were set up, but were entirely inadequate for the need, with far too few surgeons. The suffering and carnage were almost too much to fully comprehend. For days after the battle, ambulances and a large variety of volunteer wagons made the journey from the battlefield to Washington. After the debilitating heat of the first day, the suffering was intensified by a cold summer rain which fell for two days. Rain mixed freely with blood and ran into the little stream nearby. The Medical Department along with the Union Army had received its first major test and both proved to be sadly inadequate.

The Civil War is probably the most written about single event in American history, but rarely are the grim realities of the common soldier's existence subject to scrutiny. Military strategy and military and political leadership are popularly examined subjects

of any war. Yet, the responsibility for the success of the most carefully devised military strategy lies with the common soldier. His ability and desire to fight are inextricably bound to his health and physical well-being. Of 360,000 Union deaths, only 110,000 resulted from enemy fire and the other 250,000 were due mainly to disease and complications from wounds.¹ The average soldier was ill two to three times per year and the annual mortality rate from illness was more than five percent.² Some campaigns which had great military potential were aborted by disease and some without a battle.³ Since they were primarily neither blood-letting nor militarily spectacular, they are generally ignored. The story of the war without its medical aspects presents an incomplete and unrealistic picture.

The fundamental reason for the tragic incidence of disease was the limitation of nineteenth century medical science. The Civil War occurred just a little too early to take advantage of the great progress of European medicine, especially the germ theory. The most significant factor was the lack of knowledge of the cause of disease. Pasteur was conducting research in bacteriology and Lister would shortly publish his work on aseptic surgery—both too late to benefit the soldiers of the Union Army. Civil War surgeons, in general, regarded suppuration as part of the normal process of tissue repair. Although the clinical thermometer was a hundred years old, there were not more than twenty of them in the Union Army.⁴ The stethoscope had been in use in Europe for years but was still a novelty to American surgeons. The ophthalmoscope and the laryngoscope were recently developed medical tools but very few doctors were acquainted with their uses.

The practice of medicine in the United States had reached a low ebb in the middle nineteenth century. By 1850, the previously classic practices of bleeding and purging were declining and into the vacuum rushed medical sectarians who offered all-explaining "systems" and promised cures by milder methods. One of the chief sects was homeopathy which believed that drugs causing certain symptoms would cure disease exhibit-

ing these symptoms. Also popular was Thomsonianism which used mild vegetable remedies. Most Americans seemed to feel that if they were entitled to religious freedom, why not medical freedom too?⁵ The result was great confusion and the development of many second-rate medical schools. The title "M.D." was so cheapened that some medical leaders wanted to abandon it. The medical service of the Union Army suffered because of this confusion and a number of inadequately trained and incompetent doctors were enlisted.

At the beginning of the war the Medical Department of the Union Army, like the rest of the army was wholly unprepared for the task before them. Seniority promotion and the lack of a mandatory retirement for age or disability kept it top-heavy with old men. The administration of Surgeon General Thomas Lawson, who died in May of 1861, was described by General Order 23, 1861, as "a model of inflexibility, efficiency, and economy."⁶ These words proved to be an ominous forecast of the problems to be encountered by those attempting to maintain the health of the Union Army. Lawson was replaced by Clement L. Finley who had entered the Army in 1818 and had an honorable record in the Mexican and Indian wars but was not equal to the task which now faced him.⁷ He served less than a year before he was relieved of his duties and placed on a newly established retired list.

In April, 1862, thirty-five year old William A. Hammond was promoted from the rank of first lieutenant to fill the position. Hammond's experience included twelve years in the Army and a professorship at the University of Maryland and he had already attained an outstanding professional and scientific reputation.

Hammond began a vigorous reorganization of the antiquated medical department. To the dismay of Congress, he requested appropriations of \$10,314,000—an increase of \$7,869,000 over the previous year. He began to replace certain medical directors with younger men "not quite so thickly incrustated with the habits, forms and traditions of the service."⁸ In a letter to Jonathan Letterman, recently appointed medical director of the Army of the Potomac, Hammond instructed him that red tape was out and that

efficiency and results would be all that counted. Letterman was even told that he could purchase supplies wherever available whether or not they were on the official army supply table and that he might employ on the spot, without special authorization, nurses or physicians as needed.

General Hammond in his annual report for 1862 to the Secretary of War recommended: (1) the establishment of a permanent hospital and ambulance corps specifically enlisted for duty in the Medical Department and properly officered; (2) an appropriation for an Army Medical Museum; (3) an Army Medical School to give instruction to better fit candidates for commissions; (4) a permanent general hospital in Washington; (5) independent transportation for the Medical Department; (6) construction of hospitals by the Medical Department; (7) the establishment of a central laboratory.⁹ All were farsighted, well-advised recommendations which would have greatly improved the department. Most were adopted, however, after a lapse of twenty to forty years.

Hammond was an exceptionally competent, energetic officer but not always the most tactful in his relationships with other officers and the Secretary of War. Despite his successful reforms and untiring efforts for the medical department, Doctor Hammond became the victim of a series of antagonisms, including the jealousy of his corps officers, bickerings of surgeons and collisions with Secretary of War Stanton and he was dismissed from service, July, 1863. The whole episode bore an amazing resemblance to the service and unjust dismissal of Doctor John Morgan who served as Director General of the Medical Department of the Continental Army, 1776-1777.¹⁰ The dismissal of Hammond appeared to be a victory for the Army "regulars who did not want to be reformed, the elders who did not want young men promoted over them, and the politicians who did not want to wrestle with idealists."¹¹

At the beginning of the War other aspects of the organization of the medical department were much the same as they had been in 1776.¹² The system of regimental hospitals which had been the source of many problems for the Continental Army was still in-

efficient and cumbersome. One regimental staff might be temporarily inactive while a nearby staff was overwhelmed by a rush of casualties. There was a reluctance on the part of some regimental surgeons to treat wounded of other regiments, who sometimes went unattended as a result. The first 75,000 Union volunteers furnished their own surgeons in much the same manner as did the Revolutionary regiments, with much the same results. There was a wide variation in the qualifications and training of appointees who were not usually required even to pass a qualifying examination. By the end of the war the number of physicians serving in the Union Army increased from 98 to 11,000, including some incompetents but also, brilliant young physicians who later achieved great prominence such as William W. Keen and John Shaw Billings.

The Medical Department evolved into the following organization: Regulars—A Surgeon-General, an Assistant Surgeon-General, a Medical Inspector-General, 16 Medical Inspectors, 170 Surgeons and Assistant Surgeons; Volunteers—547 Surgeons and Assistant Surgeons, 2,109 Regimental Surgeons; 3,882 Regimental Assistant Surgeons; Contracts—85 Acting Staff Surgeons, 5,532 Acting Assistant-Surgeons. As the war continued, the Medical Department became so systematized that in spite of the remaining inadequacies, the wounded and sick were cared for better than they had ever been in any army.¹³

Jonathan Letterman devised a system of field evacuation which he put into effect by a circular dated October 30th, 1862.¹⁴ It was so successful that the system with a few additions and alterations was in use through World War I. Letterman's ambulance system was adopted by Congress for the Union Army after a year of trial in the Army of the Potomac. He created an ambulance corps which took the ambulances away from the regiments and organized them into division units to be manned by soldiers chosen by the Medical Department and drilled by line officers. This replaced the use of men from the Quartermaster Corps and bandsmen who had proved to be very unsatisfactory. The wounded first walked or were carried to a forward dressing station which had been established by regimental medical of-

ficers as close to the firing line as possible. After receiving first aid, they were taken by ambulance to the divisional field hospital which was usually just out of artillery range. Those cases requiring immediate attention received surgery there and all who could be moved were sent to the general hospitals of which there were 225 by the end of the war. A union hospital detachment usually consisted of fourteen army wagons and four medical wagons, carrying twenty-two hospital tents with supplies and equipment to care for seven to eight thousand men.¹⁵ Other means used to transport wounded included railroad hospital trains which might be made up of specially-fitted coaches or might be nothing but empty cattle cars with straw bedding. Hospital ships were used on the rivers. Some of these were empty freighters returning to their bases and others were steamers completely remodeled as hospital ships.

A unique organization—the United States Sanitary Commission—once termed by Lincoln as a “fifth wheel” played an important part in improving medical care. The Commission was modeled after the British Commission which investigated care of the wounded in the Crimean War. It was the response of a concerned and aroused citizenry to the appalling living conditions and medical care of the Army. Frederick Law Olmsted was the director of the Commission which investigated, reported, and pressured the Army and Congress into reform of medical care and services. Olmsted and other members of the Commission spent hours in endless negotiations with cabinet members, congressmen, field commanders, and medical officers. Because of their persistence, camp sanitation was improved, soldiers’ rations became more nutritious, and nursing by women was encouraged. In major cities such as St. Louis, Philadelphia, and New York, “Sanitary Fairs” were held to raise money for the work of the Commission. The Fairs contributed an estimated \$25,000,000 and were primarily the work of women. The money was used to underwrite the work of the Commission and also for the purchase of medical supplies and equipment, which included a completely outfitted hospital ship.

The War Department, after a great deal of pressure, commissioned Dorothea Dix as the first Superintendent of Army Nurses. Volunteers for the women’s Army Nurse Corps received little training but were required to be strong and of *plain* appearance. The idealism of most of the women made up for other deficiencies and one of their greatest contributions was the uplifting of the morale of their patients. Diaries and reminiscences of the nurses provide vivid realistic pictures of the suffering and tragedy within the hospitals. Statistics cannot convey the reality of the sick and wounded, but Louisa M. Alcott’s *Hospital Sketches* can evoke real empathy for the misery of the wounded.

Several factors contributed to the appalling incidence and deadliness of illness in the Army—ignorance of the germ theory, haphazardness of induction procedures, faulty diet, inadequacies and poor quality of clothing and shelter, and plain filth.

The Army’s regulations were not the blame for the induction of men who should never have been enlisted. The physical examination of volunteers was generally a farce. Olmsted reported to the Secretary of War that hardly a single regiment had conducted a thorough medical examination and in fifty-eight percent of the cases the examination was a mere pretense.¹⁷ Chronic cases which should never have been inducted clogged hospitals which were needed for battle casualties. Included were syphilitics, epileptics, and men between sixty and seventy years of age. One entire regiment, gathered at Washington, had never been examined.¹⁸ The prescribed army routine for physical examinations, although inadequate by today’s standards, would have revealed most of the defectives had it been followed.¹⁹ The ignorance of some examining surgeons, the need of men, the eagerness of many recruits and the pressure of recruiting agents resulted in scandalous abuses of the regulations. The War Department several times repeated orders that the examining procedures be strictly followed. However, one medical director wrote that the Army was apparently considered “a grand eleemosynary institution for defectives whose townships would thus be relieved of the burden of supporting them.”²⁰

Many of the new recruits were quite young and their average age was in the early twenties. Medical officers of the old regular Army were surprised at the epidemics which swept through camps of new recruits. In addition to coping with inductees who were too old, the doctors had to cope with epidemics of childhood diseases. Measles was the most serious from the standpoint of numbers, possible serious complications, and easy communicability. Many men who were accepted for service were in such poor physical condition that they were easy prey to camp epidemics.

Army food was especially hard on the health of new recruits who did their own cooking. Not only did the men suffer from their poor cooking, but also from their inability to make a ration last from one issue to the next. A main army staple was fat salt pork. No fresh vegetables were issued though they were often offered desiccated vegetables which they intensely disliked, mainly because they never knew how to cook them. Soldiers in the field often supplied themselves with vegetables by foraging at the expense of the enemy. One surgeon declared that "beans killed more than bullets."²¹ Medical officers tried in vain to get recruits to use a variety of cooking methods in order to prevent "death from the frying pan." The quality and quantity of rations and their availability were constant sources of concern for the Medical Department and the Sanitary Commission. Olmsted of the Sanitary Commission pointed out that the volunteer's ration was atrociously cooked and wickedly wasted. The doctors urged that the Army use trained company cooks, but the bureaucracy was disinclined to change its ways. Digestive disturbances were a major cause of disability.

Injurious to the health of the recruits were inadequate clothing and shelter, especially at the beginning of the war. The men received insufficient blankets and clothes were of inferior quality. Some clothing was of such poor quality that soldiers found their clothes literally falling off them. Shoes were frequently of extremely poor quality and many soldiers found it easier to go barefoot than endure the discomfort of wearing them. Many of the tents to be used for shelter were so small that expecting a

grown man to be sheltered by them was a little ludicrous. As the war progressed both the clothing and shelter were improved.

A very critical factor affecting the health of all the troops was the utter filth around their campsites. The Army surgeons understood the correlation between the sanitary condition of the camps and the high disease rates, but lacked the authority to see that conditions were improved. The "rugged individualism" of the American soldier was a contributing factor and many men seemed to abandon the restrictions of normal society when they arrived at camp. Many ignored the latrines and disposed of waste at their own convenience. Discipline was frequently very lax and orders concerning personal and camp cleanliness were ignored.

A major problem was a lack of latrines plus the reluctance of many men to use them. Some regiments didn't bother to dig latrines at all. The usual latrine was a straddle trench thirty feet long into which fresh earth was supposed to be thrown each day, but frequently was not. The result was offal and refuse about the camps and the filth even ran into the tents. Dysentery and typhoid were inevitable in such conditions and the civil population near the camps became infected also. A Washington doctor reported that the city, in the summer of 1861, was "poisoned by the soldiers and everybody is ill."²² Insect pests always accompanied the filth, including flies, mosquitoes, fleas, and lice.

The Sanitary Commission was a persistent agitator for reform. They investigated camps and made complete reports on the conditions of each camp. Olmsted exerted consistent and determined pressure to clean up the camps.

The battlefield doctor's greatest task was surgery. Most of the surgery was done under difficult conditions in the field hospitals not far from the firing line. The wounded had a fair chance of survival after they arrived at the general hospitals, but the difficulty lay in getting them there. At the field hospitals the wounded usually came in overwhelming numbers and for the weary surgeon amputation or neglect were his alternatives and the latter usually meant death. A surgeon during the Wilderness Campaign wrote his wife that he had been

operating for four days upon men who had been wounded in a battle which lasted only two hours.²³ The gruesome sight of wagons filled with amputated legs and arms was always near the field hospitals. For anesthetics the surgeons used chloroform, ether, opium, and a mixture of chloroform and ether.

Because surgeons were ignorant of the germ theory, the recovery period was a critical time for the wounded. So many wounds were infected that the pus caused by the bacteria was believed by most surgeons to be evidence of normal healing. The "surgical fevers"—pyemia, tetanus, osteomyelitis, and hospital gangrene—accounted for the majority of wound fatalities. Surgeons unaware of the cause of these fatal afflictions, operated cases on dirty tables, wore blood stained aprons and used the same sponges on patient after patient. The sponges would be rinsed occasionally in a bucket of contaminated water. Carbolic acid was sometimes used to treat infections, but not as a preventive measure. A few surgeons such as W. W. Keen and J. A. Liddell did try to introduce the idea of cleanliness in the care of patients and ordered patients be kept scrupulously clean, that separate sponges be used for each case and that bandages be thrown away instead of washed and reused. However, generally little progress was made in this area.

The influence of infectious diseases on the Civil War was significant. Military decisions were won on the battlefield, but what reached the field was determined largely by what happened medically during the preceding months. The manpower loss through warfare with microorganisms was far greater than that lost in battle with the military enemy. The Civil War provides the last opportunity in the pre-microbiological era to study natural biological warfare on a large

scale. Disease appeared with a fairly uniform pattern in nearly all troops. It usually came in two waves—the acute infections of childhood and the camp diseases. About half the volunteers, especially those from rural areas, were susceptible to the contagious childhood diseases. The worst threats were measles and mumps along with whooping cough, tonsillitis, and diphtheria. There were 76,318 cases of measles reported, with 5,177 deaths. However, this does not present a true picture of the mortality rate because many deaths credited to other causes were actually the result of complications from measles.

The camp diseases appeared in every unit either in endemic or epidemic form. They were typhoid fever, malaria, diarrhea, and dysentery. These diseases greatly reduced military efficiency because of their high mortality, their protracted course, and their ability to occur in epidemics. Dysentery and diarrhea were the most important military diseases from the viewpoint of numbers, mortality, and recurrences. In severity, they ranged from mild walking cases to incapacitated cases with half-hourly blood and pus evacuations. The vicissitudes of camp life with its unsanitary conditions and unsatisfactory army rations were the principal causes of the camp diseases. Diarrhea occurred at all seasons, in all climates, and in all geographical areas. Much of the straggling on the march resulted from the weakness, frequent bowel movements, fever and anemia of dysentery. Some of the chronic and recurrent diarrhea was associated with dietary deficiencies of vitamins. Malnutrition retarded recovery, delayed wound healing, and produced lassitude and weakness. The introduction of fresh fruit and vegetables in the diet was an enormous benefit and often stopped even the diarrhea.

Respiratory diseases were also very prevalent. The most important were pneumonia and tuberculosis and these were also related to camp conditions and inadequate shelter and clothing. Other diseases occurring in significant numbers of cases were: smallpox, cholera, bronchitis, boils, gonorrhea, syphilis, jaundice, abscess, meningitis, typhus, yellow fever, and scarlet fever. One soldier wrote, "these big battles is not as bad as the fever."²⁴

Virginia R. Allen received her master's degree in history from Central State College, Edmond, Oklahoma, in 1968. She is currently doing work toward a Ph.D. degree in American history and is working as a teaching assistant at Oklahoma State University.

An editorial in the *American Medical Times*, published in August, 1862, attributed the failure of McClellan's Peninsula Campaign to sickness.²⁵ A hundred regiments were invalided and fifty thousand soldiers had been sent to the rear. It listed four causes: (1) the mustering of unfit persons; (2) the unhealthy location and inadequate provision of camps; (3) disregard of policing camps; (4) improper and badly cooked food.

The harmful military effects of disease assumed many forms.²⁶ Units of all sizes were affected and the severity varied from slight to extinction. Disease interfered with training and a few regiments had to be disbanded or discontinued. Intercurrent disease was responsible for stopping some campaigns in the planning stage, arrested others before they came to battle, and actually stopped attacks that were under way.²⁷ Its influence was generally greater on campaigns than on battles because of their longer duration. Sickness was a constant burden to the military organization. For each soldier disabled by disease approximately two more were made militarily ineffective because of the care the ill required and the transportation of equipment, supplies, etc. for them.

In spite of the ample opportunity for a wide variety of medical experience, the war did little to advance medical science. A few prominent names and contributions emerged. Two major achievements, the establishment of the Army Medical Museum and compilation of *The Medical and Surgical History of the War of the Rebellion* were initiated by Surgeon General Hammond. Jonathan Letterman's system of field evacuation had a far reaching effect on the army medical service. William W. Keen pioneered in the field of neurology during the war, and earned international recognition. John Shaw Billings was an outstanding medical officer, but is best remembered as the father of the

Army Medical Library and for his bibliography on the history of medicine. Women's rights made a forward step with the service of Doctor Mary E. Walker who served the Union Army for three years as a nurse and, in the last year of the war, was finally granted the position of an assistant surgeon—making her the first woman in United States history to hold such a commission.

Ever since the Civil War ended, Americans have sought to justify that war and even glorify it. The story of the suffering and illness of the Union Army presents little that can be glorified or romanticized. It is not even possible to seek justification in advancement of medical science. Time may heal the wounds and diminish the scars of war, but it cannot erase them. The Civil War has often been called the War between the States, but it, like all wars, was not between states or nations, but between mortal men. □

FOOTNOTES

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4. George W. Adams: *Doctors in Blue: The Medical History of the Union Army in the Civil War*. (New York: Henry Schuman, 1952), p. 51.
5. Shyrock, p. 19.
6. P. M. Ashburn: *A History of the Medical Department of the United States Army*. (Boston: Houghton Mifflin Company, 1929), p. 67.
7. Ashburn, p. 68.
8. Adams, p. 32.
9. Ashburn, p. 75.
10. Virginia R. Allen: "Medicine in the American Revolution." *Journal of the Oklahoma State Medical Association*, September, 1970, pp. 427-428.
11. Adams, p. 41.
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15. Jack Coggins: *Arms and Equipment of the Civil War*. (Garden City, New York: Doubleday and Company, Inc., 1962), p. 117.
16. William Y. Thompson, "Sanitary Fairs of the Civil War," *Civil War History*, Vol. IV, p. 51.
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PUBLIC HEALTH SERVICE RECOMMENDATION ON SMALLPOX VACCINATION

The Public Health Service has accepted the recommendation on smallpox vaccination formulated by its Advisory Committee on Immunization practices. The following is the text of the Advisory Committee's recommendation:

"The Committee has reviewed the success achieved so far by the World Health Organization (WHO)-sponsored smallpox eradication effort and fully expects that it will continue. It now believes that the practice of routine smallpox vaccination is no longer indicated in this country.

"The Committee believes that public health efforts should be devoted to assuring adequate immunization of all personnel involved in health services and of all travelers to and from continents where smallpox has not been eradicated.

"Because of the rapidly declining incidence of smallpox in the world and the vastly reduced risk of its being imported into the United States, health officials in the United States should consider the discontinuation of compulsory measures as they relate to routine smallpox vaccination.



News From The Oklahoma State Department of Health

"The Public Health Service should regularly evaluate and distribute information on the progress toward worldwide smallpox eradication. This will provide a basis for future assessment of smallpox vaccination practices in the United States.

"Finally, physicians and public health agencies should intensify efforts to assure that all adverse vaccine reactions are reported and that the following contraindications to smallpox vaccination are scrupulously observed: (1) eczema and other forms of chronic dermatitis in the person to be vaccinated or in a household contact; (2) pregnancy; (3) altered immune states from disease or therapy."

The Oklahoma State Health Department schedule for active immunizations does *not* list smallpox as a recommended routine immunization. Smallpox immunization is *not* required by the Oklahoma Public Schools Immunization Law for admission to school.

COMMUNICABLE DISEASES IN OKLAHOMA FOR SEPTEMBER, 1971

Disease	Sept. 1971	Sept. 1970	August 1971	Total to Date	
				1971	1970
Amebiasis	1	5	3	47	46
Brucellosis	6	1	—	4	5
Chickenpox	4	13	3	191	2422
Encephalitis, infect.	4	1	8	28	14
Gonorrhea	905	574	642	5705	4677
Hepatitis, infect. and serum	70	40	94	605	326
Leptospirosis	—	—	—	1	—
Malaria	3	7	1	65	81
Meningococcal infections	—	—	—	5	19
Meningitis, aseptic	35	4	4	106	33
Mumps	1	48	1	192	2182
Rabies in animals	7	9	8	251	82
Rheumatic fever	2	—	1	20	4
Rocky Mt. spotted fever	1	3	2	27	22
Rubella	1	4	3	64	812
Rubella, congenital syn.	—	—	—	—	—
Rubeola	1	30	2	791	470
Salmonellosis	17	12	15	147	119
Shigellosis	10	15	11	61	69
Syphilis	104	110	105	949	1076
Tetanus	—	—	—	1	—
Tuberculosis, new active	32	25	37	258	241
Tularemia	2	1	2	16	8
Typhoid fever	—	—	—	2	1
Whooping cough	—	6	—	16	38

Carlock Southern Medical President

J. Hoyle Carlock, M.D., became President of the Southern Medical Association during its 65th Annual Meeting in Miami Beach, Florida. His elevation to the presidency caps off service to the SMA which started in 1958 with his election as Associate Councilor from Oklahoma.

A past-president of the OSMA in 1962-63, he was elected to SMA's highest office at its last annual meeting and has served as president-elect during the past year. The Southern Medical Association is the largest general medicine organization in the country, embracing sixteen southern states and the District of Columbia. Nearly 20,000 M.D.s are members of the association.

Doctor Carlock, a resident of Ardmore, Oklahoma, received his undergraduate training at Kemper Military School and received his A.B. Degree from Oklahoma University. He is a 1935 graduate of Tulane University School of Medicine and served his internship at Charity Hospital, New Orleans, Louisiana, and Cincinnati General Hospital, Cincinnati, Ohio. He received his residency training from Scott and White Hospital, Temple, Texas, and pursued additional studies at the Rotunda Hospital, Dublin, Ireland; American Hospital, Paris, France; and the American University, Vienna, Austria.

During World War II Doctor Carlock served five years active duty in the European Theatre of Operations and was Chief of Surgery of the 121st Evacuation Hospital. He entered the Army Medical Corps prior to Pearl Harbor and was discharged in late 1945 as a Lieutenant Colonel. He reopened his medical practice in Ardmore in September of that year.

He has had a long-standing interest in both organized medicine and civic affairs. He served two terms as President of the Carter-Love-Marshall County Medical Society, and ten years as a delegate from that Society to the OSMA House of Delegates. He served six years as Vice-Speaker of the House of Delegates and eight years as a member of the Board of Trustees.

In 1960-61 Doctor Carlock was Vice-President of the OSMA. He was elected OSMA President-Elect on May 9th, 1961, at the annual meeting in Tulsa. Serving one year as President-Elect, he became President of the association in May of 1962 and served until May of 1963.

His activities in the Southern Medical Association began in 1958 when he was chosen Associate Councilor from Oklahoma, a capacity he filled from that year until 1963. From 1963 until 1968 he was Councilor from Oklahoma, and in 1967 was elected Chairman of the SMA Council.

During the SMA's 63rd Annual Meeting in 1969 he was elected First Vice-President, in 1970 he was chosen President-Elect and this year became President.

His civic interests are myriad. He has been a member of the Ardmore City School Board, a member and director of the State School Board Association, Director of the Exchange National Bank of Ardmore, and a Director of the Ardmore Chamber of Commerce. He has served on the Executive Committee of the Oklahoma Medical Research Foundation and has been a Director of the Oklahoma Development Council and the Oklahoma Public Expenditures Council. He was one of the first appointments to the President's Committee on Aging.

On March 31st, 1965, Doctor Car-

OSMA
JOURNAL / news

lock officially retired from the active practice of medicine. After nearly 30 years of ministering to the health needs of Ardmoreites, he decided it was time to take up his second love, business. He is a cattle man, oil operator, investments manager and real estate dealer.

Married to the former Ruth Small, of Ardmore, Doctor and Mrs. Carlock have three children: John Hoyle, III, Carol Jean, and Thomas Robert.

The Carlock family has been identified with the First Methodist Church of Ardmore since its beginning. The John Carlock Sunday School Class memorializes his late father, and his mother has been honored in the naming of Cora Carlock Chapel. The doctor has served as a church Steward, Chairman of the Board of Stewards, and long time member of the church's Board of Trustees.

One of the interesting sidelights of the doctor's life is the fact that he quite literally fought his way through Tulane Medical School. He worked as a professional boxer in the New Orleans area while he was going to school. □



J. Hoyle Carlock, M.D. is sworn in as president of the Southern Medical Association by retiring president Albert C. Esposito, M.D.



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Medicare Assignment Statement Issued

A clarifying statement on physicians taking assignment of Medicare claims has been issued by the Aetna Life and Casualty Company, Oklahoma's Medicare carrier. Because of confusion over the rules, a few physicians have found themselves having to repay money to their patients when they fail to follow the assignment agreement.

The Medicare law provides that whenever a physician accepts an assignment of benefits from a Medicare recipient, he must also accept as full payment the amount determined by the carrier as a reasonable charge for the service. "The physician or supplier is, therefore, precluded from billing the patient for part or all of any amount by which the carrier has reduced the charge submitted."

Some physicians have taken assignment on Medicare benefits and then simply billed the patient for the difference between their original charge and the amount allowed by Medicare. This procedure violates the assignment agreement and could result in a physician facing criminal charges for fraud.

A physician can collect from the patient the 20 percent co-insurance amount as well as any deductible amount which is applicable. However, the 20 percent must be 20 percent of the amount *which the carrier has determined to be a reasonable charge*, not the amount the physician originally billed.

As an example, a physician performs a tonsillectomy, charges \$175 for his service, and he takes an assignment. The Medicare carrier determines that \$150 is a reasonable fee and then pays 80 percent of this amount. The physician may then bill the patient for 20 percent of the \$150, not the difference between the amount the carrier allowed and his original fee of \$175, and not 20 percent of the original \$175.

Because of their method of book-keeping, a number of physicians have found themselves in trouble. Even though they were taking assignment, on the day they saw the

patient they were billing immediately for the 20 percent co-insurance. Their bill was based on the fee they had set . . . not the reasonable charge as established by Medicare. If Medicare established a lower fee as reasonable, the physician had to repay the patient or establish a credit balance for him.

The Aetna-Medicare office has stated, "If a physician . . . continues to breach the assignment agreement, it may become necessary to discontinue payment of assigned claims which he submits." □

Myrtle Laughlin Lectureship Announced

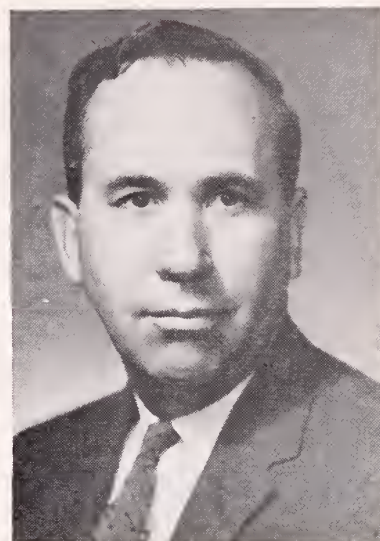
Frank H. Gardner, M.D., Professor of Medicine and Director of the Hematology Research Laboratory at the Presbyterian-University of Pennsylvania Medical Center in Philadelphia, will present the Fourth Annual Myrtle Laughlin Memorial Lectureship in Hematology at the University of Oklahoma Medical Center in Oklahoma City. The lecture will be held in the East Lecture Hall of the Basic Science Building on January 13th, 1972, at 4:00 p.m. The title of Doctor Gardner's presentation will be "Treatment of Aplastic Anemia." □

BNDD Requires Change of Address

Federal regulations provide that if a physician changes his practice location address it is necessary for him to apply for a new certificate of registration from the Bureau of Narcotics and Dangerous Drugs. A physician may apply for a new certificate in advance of the effective date of a change in his address by filing an application and paying the appropriate fee.

If a physician is currently using a certificate of registration on which either his name or address is wrong, he should contact the bureau immediately. The BNDD registration number is good only for the address listed on the certificate of registration . . . not for the physician by name. □

Thomas Named Board Chairman



Harlan Thomas, M.D., Tulsa general practitioner, was named Chairman of the Board of the American Academy of Family Physicians during their meeting in Miami Beach, Florida, on October 7th, 1971. AAFP has 32,000 members, second largest medical organization in the U.S. □

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Amphetamine Record Requirements Changed

Physicians must now keep accurate records regarding the dispensing or administering of amphetamines and methamphetamines. The new record requirements are contained in a recently published regulation from the Bureau of Narcotics and Dangerous Drugs.

The new regulation states, "Generally, a physician must keep records with respect to: (1) *narcotic drugs* which he dispenses (other than by administering or prescribing) to the patient, and (2) *non-narcotic drugs* which he dispenses or administers to the patient and charges the patient for the drug, either separately, or together with other professional fees."

Federal regulations distinguish among administering, prescribing, and dispensing. Dispensing refers to the giving or selling of drugs to a patient to take with him, while administering refers to drugs which are taken in the physician's office, i.e., injections or drugs physically ingested in some manner in the physician's presence.

The original regulation simply required that records had to be kept for non-narcotic substances which a physician dispensed. The addition of the phrase "or administers" to the regulations means that detailed records must be kept on amphetamines, methamphetamines, and other non-narcotic drugs found in Schedule II of the Controlled Dangerous Substance List.

The record keeping requirements are as follows:

- (a) The name of the substance;
- (b) Each finished form (e.g., 10-milligram tablet or 10-milligram concentration per fluid ounce or milliliter) and the number of units or volume of finished form in each commercial container (e.g., 100-tablet bottle or 3-milliliter vial);
- (c) The number of commercial containers of each such finished form received from other persons, including the date and number of

containers in each receipt and the name, address, and registration number of the person from whom the containers were received;

(d) The number of units or volume of such finished form dispensed, including the name and address of the person to whom it was dispensed, the date of dispensing, the number or units or volume dispensed, and the written or typewritten name or initials of the individual who dispensed or administered the substance on behalf of the dispenser; and

(e) The number of units or volume of such finished forms and/or commercial containers disposed of in any manner by the registrant, including the date and manner of disposal and the quantity of the substance in finished form disposed. □

PHS Urges Discontinuation Of Smallpox Vaccination

A recommendation by the Committee on Immunization Practices of the United States Public Health Service calls for the discontinuation of "routine and compulsory" smallpox vaccinations in this country. The move was concurred in by the American Academy of Pediatrics Committee on Infectious Diseases.

In making the recommendation the PHS Advisory Committee stated that it "now believes that the risk of smallpox in the United States is so small that the practice of routine smallpox vaccination is no longer indicated in this country." It went on to urge that public health efforts should be devoted to assuring adequate immunization of all personnel involved in health services and of all travelers to and from continents where smallpox has not been eradicated.

Because of this new ruling, a smallpox vaccination certificate will be required for entry into the U. S. only for persons who have been in the following countries reporting smallpox infected areas: Botswana, Democratic Republic of the Congo, Ethiopia, India, Indonesia, Malay-

sia, Muscat and Oman, Nepal, West Pakistan, and the Sudan.

PHS is also recommending that persons planning to travel to Brazil, any country in Africa, or any country in Southeast Asia also must be vaccinated against smallpox for their own protection.

Non-selective vaccination for protection against smallpox began when the disease was widespread and uncontrolled. According to a recent publication from the Oklahoma Department of Health, this vaccination policy now unnecessarily exposes a large segment of the population to the risk of complications resulting from vaccination . . . "a risk greater than the probability of their contracting the disease." There has not been a documented case of smallpox in the U. S. since 1949.

The PHS Advisory Committee report closed by saying, "Physicians and public health agencies should intensify efforts to assure that all adverse vaccine reactions are reported and that the following contraindications to smallpox vaccinations are scrupulously observed: (1) eczema and other forms of chronic dermatitis in the person to be vaccinated or in household contact; (2) pregnancy; (3) altered immune states from disease or therapy." □

Alpha Omega Alpha Names 10 New Members

Ten senior students at the University of Oklahoma School of Medicine have been elected to membership in Alpha Omega Alpha, honor medical society, Doctor R. T. Coussons, faculty advisor, announced recently.

The new members will be initiated after the annual AOA fall lecture scheduled for December 9th at the Medical Center.

The new AOA members are:

Fred G. Silva, president, Oklahoma City; Kathryn A. Hale, first vice-president, Beggs; James L. Pool, second vice-president, Philip W. Perryman, Jr., Gene Parks and James A. Lewis, all of Tulsa; Ross C. Hensley, Weatherford; Gerry L. Maddoux, Sayre; Richard P. Mayeux, Oklahoma City, and Robert O. Morton, Duncan. □

Glenn S. Kreger, M.D., Receives Life Certificate



Glenn S. Kreger, M.D., Tonkawa physician, is shown receiving an OSMA Life Membership Certificate from James A. Webb, M.D., (left) Ponca City, OSMA Trustee, District 11. The presentation was made at the regular district meeting held September 14th, 1971, at the Ponca City Country Club. □

DEATH

JAMES C. PEDEN, M.D.
1889-1971

Former Tulsa physician, James C. Peden, M.D., 81, died September 5th, 1971 in St. Louis. Born in Greenville, South Carolina, Doctor Peden graduated from the University of Pennsylvania School of Medicine in 1914. He practiced in Tulsa for about 45 years before his retirement.

Doctor Peden was a former president of the Tulsa County Medical Society and a Life Member of the OSMA. □

Book Reviews

ANTIMICROBIAL AGENTS AND CHEMOTHERAPY IN 1968. Edited by G. L. Hobby, American Society for Microbiology, Bethesda. 556 pp. Baltimore: The Williams and Wilkins Company, 1969. \$15.00. This volume represents the proceedings of the Eighth Interscience Conference on Antimicrobial Agents in Chemotherapy which was held in New York. It contains more than

100 papers originally presented at the conference. There are papers presented in each of the following categories:

- Drug Resistance and Mechanism of Action of Antimicrobial Agents
- Chemical Studies on Antimicrobial Agents and Semi-synthetic Antibiotics
- Antiviral Agents
- New Antimicrobial Agents

Evaluation of Antimicrobial Agents in Humans

In Vitro Antimicrobial Action

In Vitro Antimicrobial Action and Experimental Studies in Animals

Many of the papers deal with experimental agents, some of which are at the developmental stage. However, there are many valuable clinical references. The volume is well edited. These annuals have proved of value to all persons interested in infectious disease. *Harris D. Riley, Jr., M.D.*

ANTIMICROBIAL THERAPY. Edited by B. M. Kagan. 500 pp. and 14 illustrations. Philadelphia: W. B. Saunders Company, 1970. \$14.50.

As stated in the preface, there has long been a clear need for a comprehensive text on antimicrobial therapy. This book adequately fulfills this purpose. The volume provides a compilation of information, both theoretical and practical, much of which is difficult to locate in other sources. Most of the chapters are well referenced. It is divided into two major sections. The first entitled "Applied Pharmacology" is of generally high quality and consistent despite the multiple authorship. As might be expected, Part II, which deals with clinical applications, is more variable in quality. Perhaps the major weakness is the fact that, as with other volumes consisting of a series of independent contributions, there is certain repetition and an occasional contradiction. There are certain specific statements which represent errors in dosage recommendations. For example, in the chapter on urinary tract infections, the dosage of kanamycin, parenterally, is listed as 50 mg/kg. This should be 15 mg/kg/day. In chapter 30, the table on page 443 recommends dosages which are higher than those advised in Table 32-3.

Despite these minor errors, *Antimicrobial Therapy* is a volume which will be of value to all students of medicine, whether in training or in practice. *Harris D. Riley, Jr., M.D.*

INFECTIOUS AGENTS AND HOST REACTIONS. Edited by Stuart Mudd, M.D., 626 pp. Philadelphia: W. B. Saunders Company, 1970.

This volume collects a great deal of information on interrelationships of micro-organisms and hosts previously scattered throughout the medical literature. It is divided into four major sections. The first deals with immunology and immunization. The second section includes four chapters on infections by Gram-positive pathogens, including a section on pneumococcal vaccines by Colin M. MacLeod, President of the Oklahoma Medical Research Foundation. The next section deals with infections by Gram-negative pathogens including pertussis, neisseria, cholera, typhoid fever, brucellosis, syphilis and mycoplasmal infections. The final section has several chapters dealing with various aspects of viruses. Many of the chapters begin with fascinating historical reviews, sometimes including personal experiences not previously recorded.

Macfarlane Burnet, in his usual fine style of writing, introduces the monograph with a chapter entitled "The Newer Immunology" and provides a perspective developed over more than 40 years of experience in this field. The introductory essay on virus diseases by Christopher H. Andrewes is especially well done. The book concludes with the discussion of oncogenic viruses and a superb chapter by Maurice Hilleman dealing with interferon.

Although a great deal of information is contained in this volume, it appears to be prepared with no systematic approach and it is not comprehensive. It is likely that the topics were selected to fit the contributors rather than the reverse. There are some excellent features and much to be learned from this book, although the marked variation in style, format and content makes the reading somewhat uneven. *Harris D. Riley, Jr., M.D.*

DRUGS: DEVELOPMENT AND USE. Edited by D. R. Laurence. British Medical Bulletin, volume 26, no. 3, pages 185-266. September 1970. Published by the British Council, 97 & 99 Park Street, London W1Y 4HQ.

The British Medical Bulletin traditionally presents a highly relevant, excellent series on timely topics. This number is no exception. The clearly written chapters describe precisely various aspects of drugs, their successes, dangers, abuses and other aspects. This issue covers several current topics in clinical pharmacology. The article by Robson on evaluation of drugs for teratogenicity and their effects on fertility is excellent. In view of the current emphasis on the environment as well as the present role of the FDA, those entitled "Hazards to Man from the Use of Drugs in and on Animals" and "Problems of Food Additives with Special Reference to Cyclamates" are timely. All physicians concerned with clinical pharmacology will appreciate this number. *Harris D. Riley, Jr., M.D.*

SPEECH PATHOLOGY: AN APPLIED BEHAVIORAL SCIENCE.

By William H. Perkins, Ph.D., professor, Graduate Program in Communicative Disorders, University of Southern California and Executive Director, Las Floristas Speech and Hearing Clinic for Children, Los Angeles, California. Cloth, 449 pp., St. Louis: The C. V. Mosby Company, 1971. \$11.75.

This book was written as a basic text to explore the "scope of speech pathology." The author examines (1) the body of knowledge regarding speech and its disorders from speech pathology and related fields in the physical, social, and behavioral sciences which forms the academic and theoretical side of the profession and (2) the tools, techniques, and functions which constitute the clinical aspect or practical applications of speech pathology and its relationship to other health professions.

In undertaking such a formidable task, Doctor Perkins has chosen to divide the book into two major sections which can be used in part or *in toto*. Section One, Foundations of Speech Pathology, is a presentation of background information from such areas as research methodology, acoustics, linguistics, psychology, neurology, anatomy and physiology and a discussion of various organic and/or functional disabilities which disrupt normal speech and language behavior. Section Two, Applications of Speech Pathology, is concerned with the nature and characteristics of various speech disorders, their assessment and treatment, and a short review of the career opportunities for speech pathologists. Appendices are included to present (1) the American Speech and Hearing Association's Requirements for the Certificate of Clinical Competence, (2) the Code of Ethics of the American Speech and Hearing Association, and (3) a Selected Basic Reference List for Speech and Hearing Sciences, Speech Pathology, and Audiology, prepared by Doctor William Tiffany and students at the University of Washington, Seattle.

Each chapter is introduced by a complete outline of its contents; specific questions are posed and the text is devoted to an investigation of possible answers. "Probe questions" are also noted and documentation for research data and different points of view is provided, with a resume and a complete list of references at the end of each chapter.

This book should be of interest not only to professional speech pathologists and students in training but also to those persons in related fields who desire to learn more about the profession of speech pathology. The author's style and excellent organization have combined to produce a worthwhile and readable "text" and the extensive and current bibliography should be useful to those desiring additional information about specific topics. *Mary Ann Lively, Ph.D.* □

Miscellaneous Advertisements

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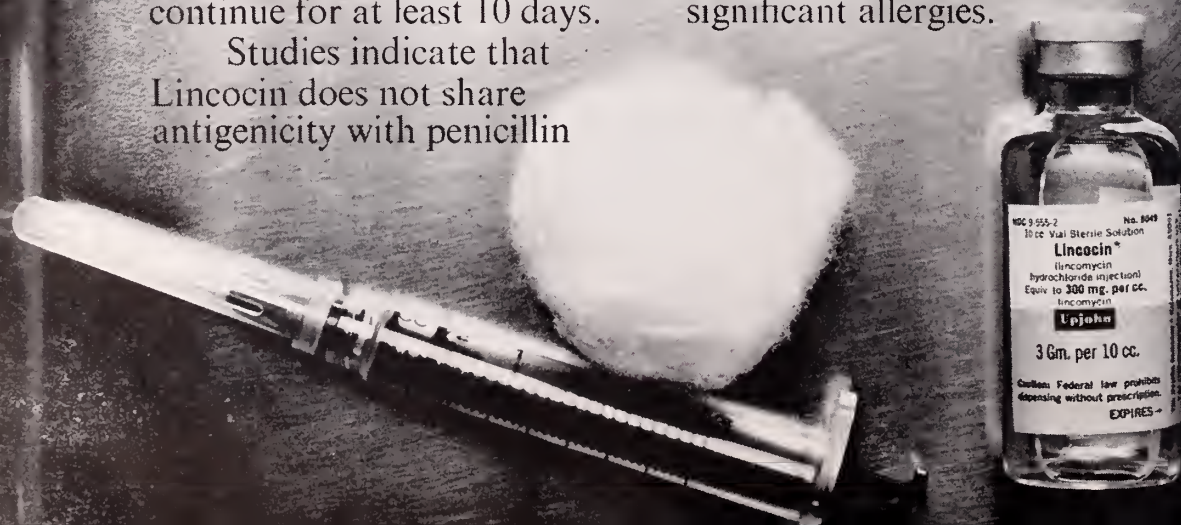


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Sterile Solution (300 mg. per ml.)

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(lincomycin hydrochloride,
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*Contains also: Benzyl Alcohol 9 mg.; and, Water for Injection—q.s.

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CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. *Local reactions*—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

HOW SUPPLIED: 250 mg. and 500 mg. Capsules—bottles of 24 and 100.

Sterile Solution, 300 mg. per ml.—2 and 10 ml. vials and 2 ml. syringe.

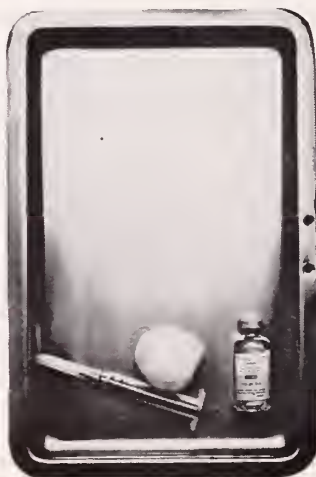
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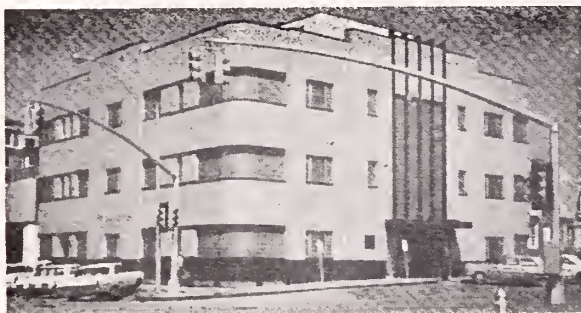
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The JOURNAL

of the Oklahoma State Medical Association

DEADLINES

March Issue

Editorial, Scientific, Book Reviews	January 15, 1972
Advertising Copy	February 15, 1972
News Copy, Miscellaneous Ads	March 1, 1972

CONTRIBUTIONS

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Footnotes, bibliographies, and legends for illustrations should be submitted on separate sheets, double-spaced. Bibliographies should follow in order of: name of author, title or article, name of periodical with volume number, page and date of publication. These references should be alphabetized and numbered in sequence.

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

The Auxiliary to the Oklahoma State Medical Association received \$9,435.85 for AMA-ERF during last year. Oklahoma's goal is \$12,000 for this year. Since this foundation was established in 1951, there has been increasing support from physicians, medical societies, their auxiliaries and the general public. The impetus to raise more funds comes from the growing need to train more physicians, support existing medical schools and to provide funds to open new medical schools.

Last June the American Medical Association Education Research Foundation had provided a cumulative sum to the Loan Guarantee Program of over \$50,000,000. A total of over 44,000 loans to medical students, interns and residents had been made. There has been an increased demand for funds because of increasing medical school enrollments and the rising need among many medical students for financial aid. During the first half of 1971, 1010 loans totalling \$1,238,000 were made to students. Residents received 158 loans totalling \$216,000 while interns received 56 loans totalling \$69,500.

Recognizing these increasing needs for financial support, your state auxiliary is actively soliciting funds in your community for AMA-ERF.

All costs of gathering the funds are paid

by the American Medical Association. One hundred percent of the funds collected are forwarded to the medical school chosen by the contributor or are equally divided among all medical schools when no specific school is selected. If the Loan Guarantee Program is chosen, no medical school may be designated.

This Loan Guarantee Program or medical school program is the ideal answer when the question arises as to giving a "Memorial," "In Honor of" or "Thinking of You."

The Board of Directors of AMA-ERF has requested fund raising letters be sent to all physicians about December 1st and will stress the tax exempt advantage of contributions before the end of the federal income tax year.

Last April the House of Delegates to the Oklahoma State Medical Association meeting voted for all contributions to AMA-ERF made by state medical association members be credited to the state auxiliary. We appreciate and welcome this continued cooperation by the members of OSMA.

Contributions in any amount may be sent to your local county AMA-ERF Chairman or to your state AMA-ERF chairman. Thank you.—Mrs. J. Hartwell Dunn, 501 N.W. 39th Street, Oklahoma City, Oklahoma 73118. □

A certification program for physician's assistants is to be developed by the AMA in cooperation with specialty societies and state and local medical societies. The move will be proposed to the House of Delegates of the AMA at the Clinical Convention in New Orleans and is based on a report to the AMA Board of Trustees from the Council on Health Manpower. The Council recommended the AMA assume leadership in developing a certification program to help assure the maintenance of high standards for the physician's assistants. Last year the House had requested a moratorium on licensing, registering, or certifying new medical personnel.

Continuing medical education is becoming more important. Voluntary self-assessment programs are now being conducted by 11 national medical specialty societies to enable practicing physicians to learn if they are adequately keeping abreast of developments in their fields of interest. Six other specialty societies are now developing such programs and three more are exploring the merits of doing so. The programs usually take the form of written examinations accompanied by suggested reading material.

Openings for 51,530 residents and 15,584 interns are listed in the 1971-72 AMA directory of approved internships and residencies. As usual, there are considerably more openings than there are personnel available. In 1970 hospitals had filled 39,500 of the 46,500 residency slots and 11,500 of the 15,400 internship positions. In the U.S., 1,517 hospitals offer either residency or internship programs

Aetna Life and Casualty Company, the Medicare Carrier for Oklahoma, has issued reminders to all physicians who accept Medicare assignments to make sure that the SSA-1490 form is signed properly by the Medicare beneficiary before it is submitted for payment. Failure to meet this requirement may mean that a claim will be denied due to incomplete or incorrect submission. Although the OSMA policy is to urge physicians not

to accept assignment, those who do should obtain the signature of the beneficiary or some responsible party such as a legal guardian, relative, friend, or representative of an institution at the time the service is recommended.

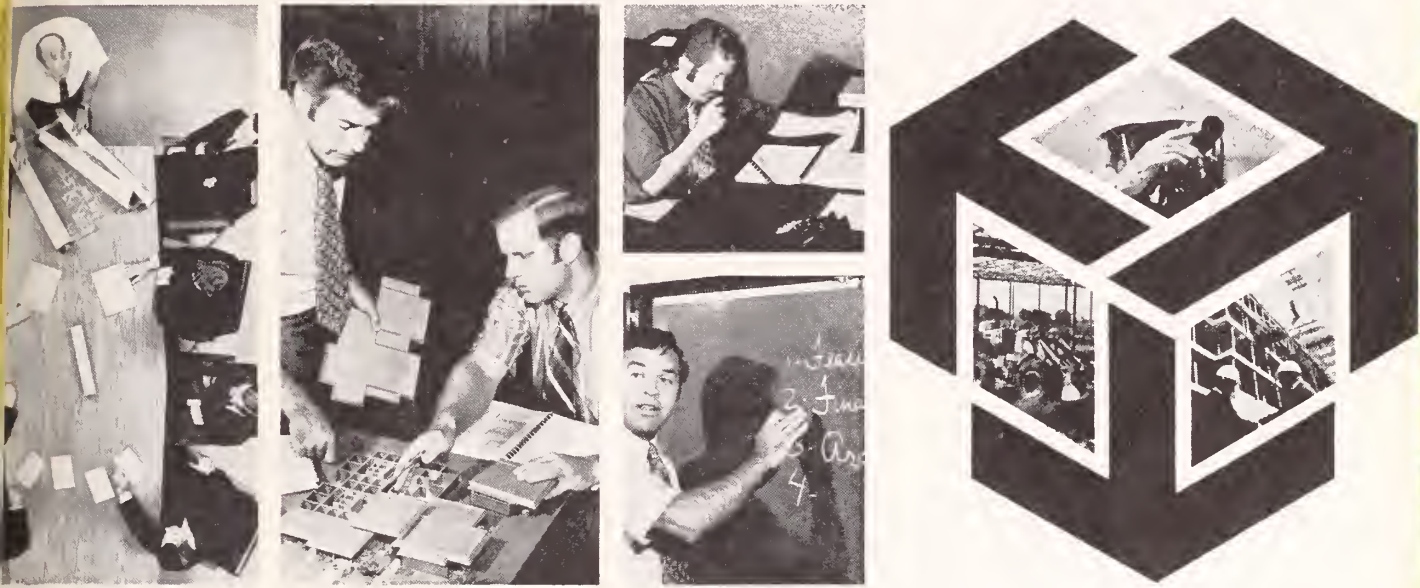
HEW Secretary Elliot Richardson wasn't too complimentary toward the Kennedy approach to health care. He told the House Ways and Means Committee that proponents of the Kennedy Bill "seemed to assume that radical intervention by the federal government in health care, in an inflexible, predetermined, and monolithic manner, is the only way to solve health organization and delivery problems." He then went on to tout the administration's health insurance proposals and said the major shortcoming of the AMA's medicaid and the Health Insurance Association of America's plan "is the great unlikelihood of achieving universality in protection."

Recent emphasis on continuing medical education points up the importance of the Medical TV series broadcast over education channels 11 in Tulsa and 13 in Oklahoma City every Tuesday at 7:00 a.m. and 9:30 p.m. Jointly sponsored by the OSMA and the University of Oklahoma Medical Center, each program in the Medical TV series is broadcast twice on the same day, once early in the morning and then late in the evening. The program schedules for each month are listed in the OSMA Journal.

Although the U. S. House Ways and Means Committee has opened hearings on National Health Insurance, everyone on Capitol Hill was aware that Chairman Wilbur Mills will not report a bill out this year. Many veteran observers are, in fact, reluctant even to predict that there will be a bill next year. In his opening statement to the committee, Mills noted widespread criticism of the U. S. health care delivery system. Among other things, he cited "rapid growth in the number of hospital and nursing home beds . . . but so lacking in planning as to create costly surpluses in many areas and shortages in others," and a "largely non-profit hospital system which actually makes 'profits' from a cost plus payment system lacking incentives for an efficient provision of services." Nearly 200 witnesses are expected to testify before the committee during hearings. □

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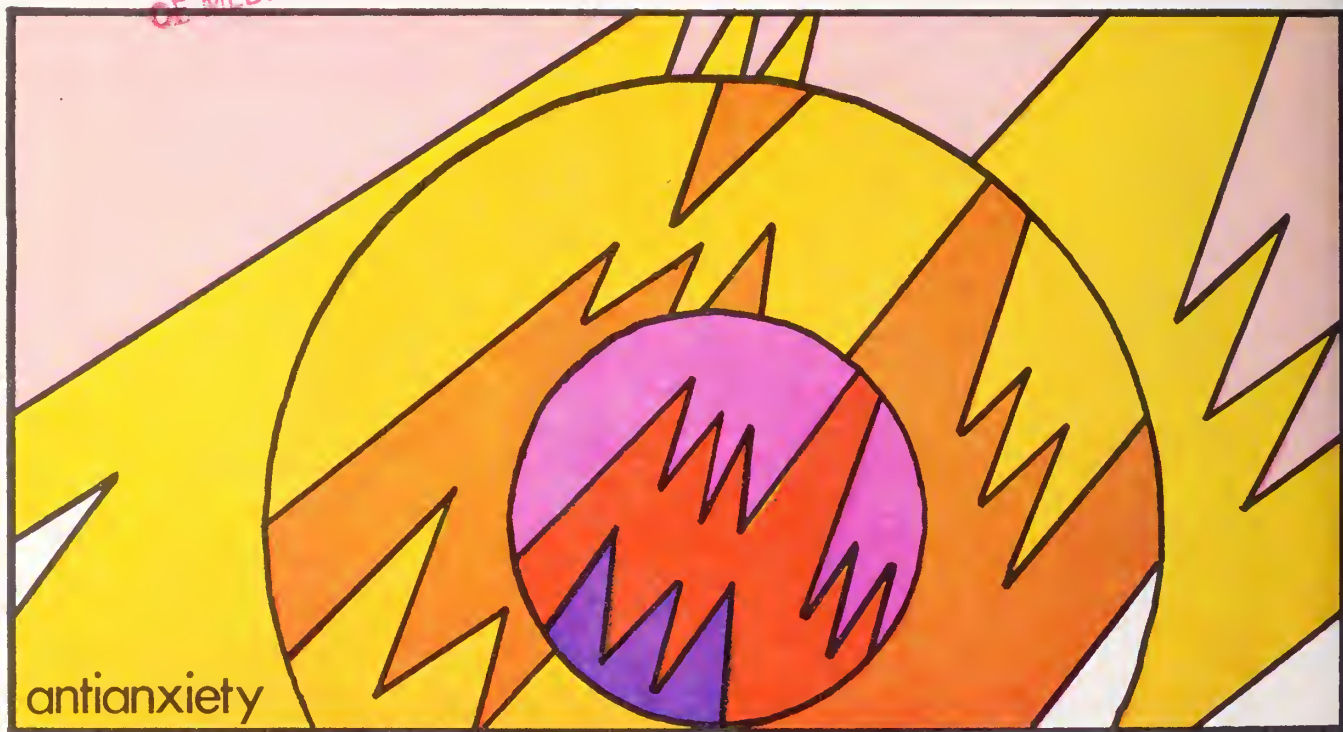
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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impend-

ing depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances, syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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JOURNAL

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Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

These studies utilized identical protocols and included eight insomniac patients. Sleep laboratory measurements in a limited number of patients are derived from all-night electroencephalographic, electro-oculographic and electromyographic tracings. Unlike traditional methods of evaluation, they are quantitative, reproducible and projectable to large numbers of subjects.

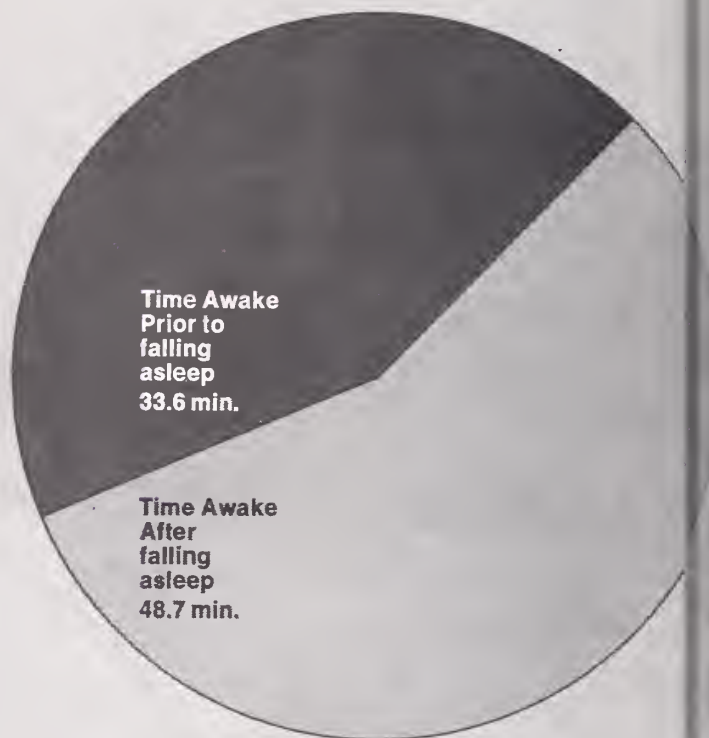
Results shown represent average values in all subjects for the three consecutive nights of placebo administration prior to Dalmane therapy and the seven consecutive nights on Dalmane 30 mg.

Dalmane is also relatively safe, as reported in clinical studies. Instances of morning "hang-over" have been relatively infrequent; paradoxical reactions (excitement) and hypotension have been rare. Dizziness, drowsiness, lightheadedness and the like were the side effects noted most frequently, particularly in the elderly or debilitated. (An initial dose of Dalmane 15 mg should be prescribed for these patients.)

References: 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

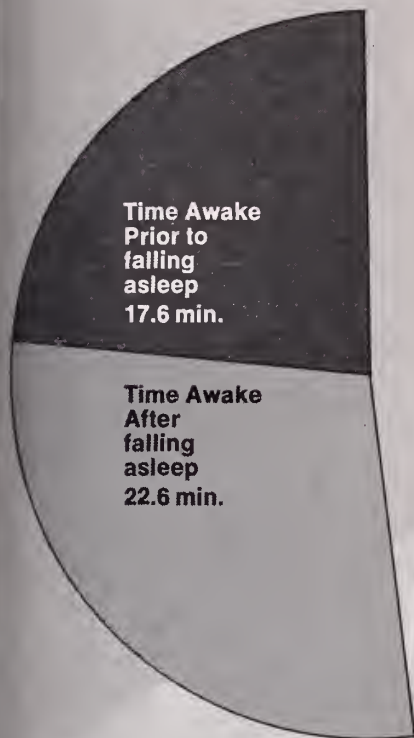
2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

Before
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(flurazepam HCl)



and slept through the night

On
Dalmane
(flurazepam HCl)



Average sleep laboratory measurements in cited studies

Parameter	Before Dalmane	On Dalmane
Time required to fall asleep	33.6 min.	17.6 min.
Wake time after onset of sleep	48.7 min.	22.6 min.
Number of wakeful periods after onset of sleep	12.2	8.4
Total sleep time	420.0 min.	447.5 min.
Total sleep percent	88.6	94.5

Clinical effectiveness as
proven in the sleep laboratory

Dalmane®

flurazepam HCl

30-mg capsule h.s.—usual adult dosage.
15-mg capsule h.s.—initial dosage for
elderly or debilitated patients.

Before prescribing Dalmane (flurazepam HCl), please consult Complete Product Information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

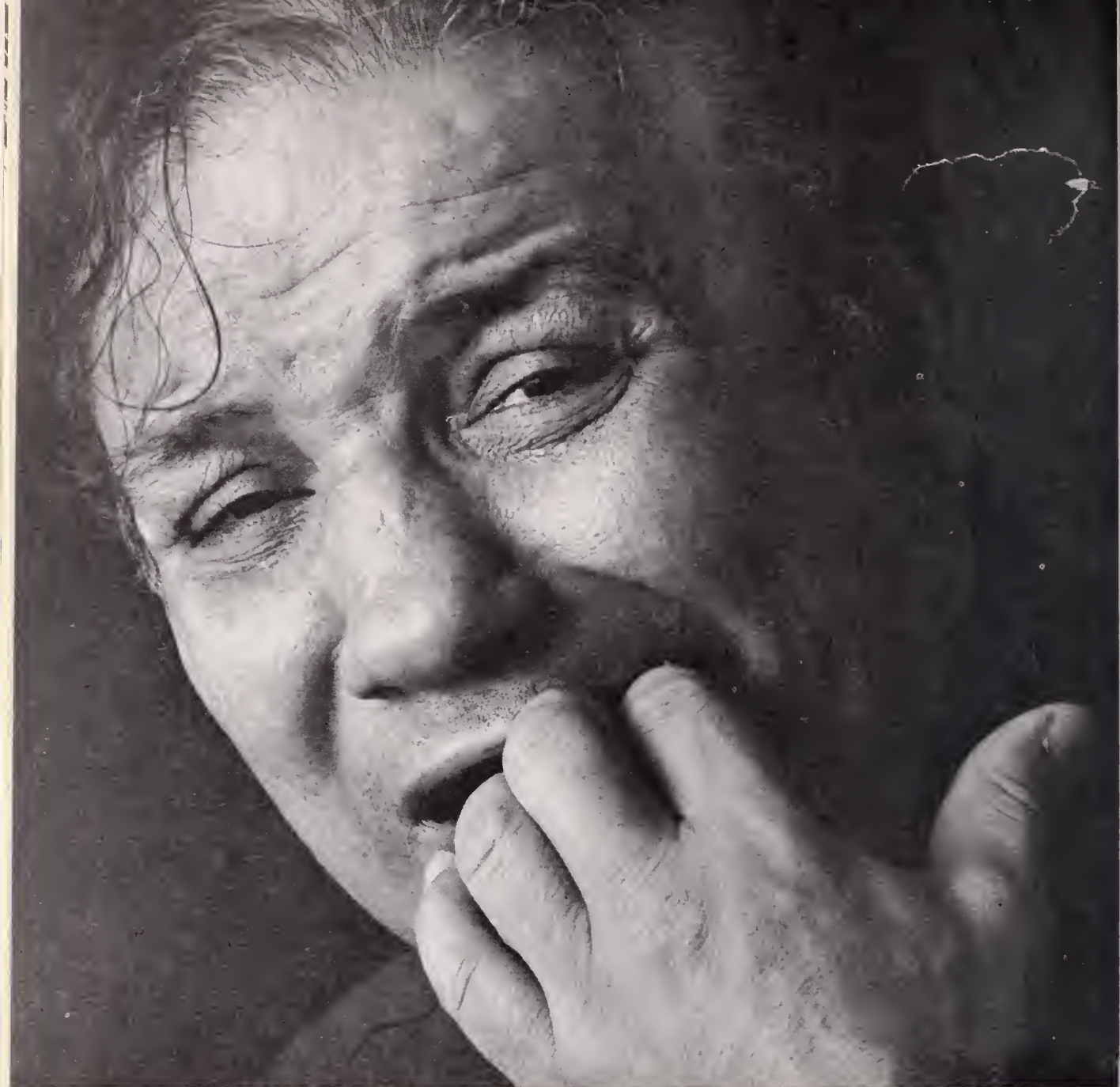
Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



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Nutley, New Jersey 07110



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The JOURNAL

DECEMBER
1971
Vol. 64, No. 12

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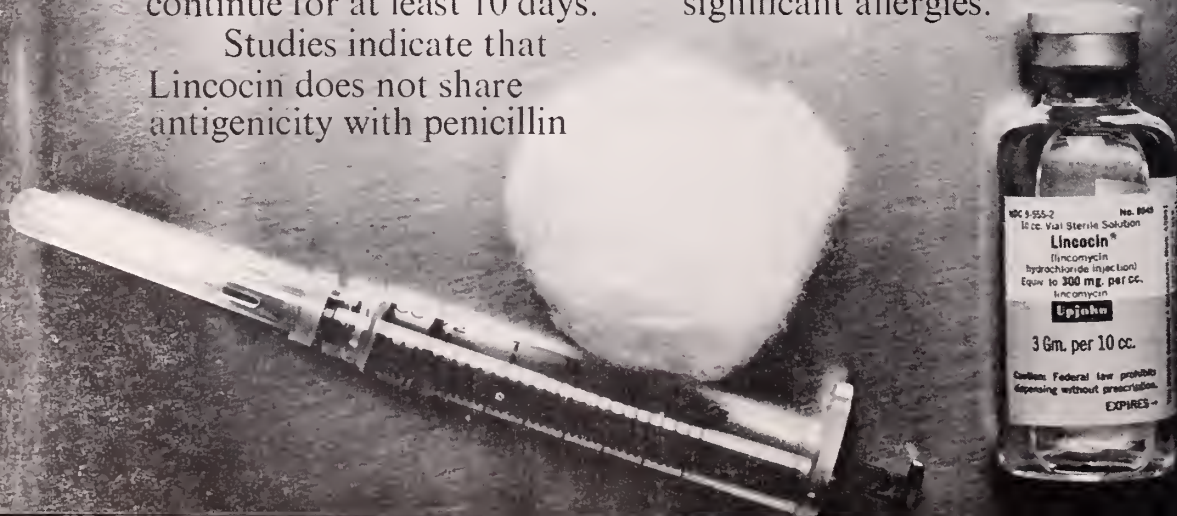
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Hypersensitivity to penicillin is a good reason to consider Lincocin[®] (lincomycin hydrochloride)

Lincocin (lincomycin hydrochloride, Upjohn) has produced a high percentage of satisfactory responses in patients with mild, moderate and severe infections due to susceptible streptococci, pneumococci and staphylococci (including many penicillinase-producing strains). With β -hemolytic streptococcal infections, treatment should continue for at least 10 days.

Studies indicate that Lincocin does not share antigenicity with penicillin

compounds. However, hypersensitivity reactions such as angioneurotic edema, serum sickness and anaphylaxis have been reported, some of these in patients known to be sensitive to penicillin. As with any antibiotic, Lincocin (lincomycin hydrochloride, Upjohn) should be used cautiously in patients with histories of asthma or other significant allergies.



So is penicillin-resistant staph.

Lincocin (lincomycin hydrochloride, Upjohn) has been demonstrated to be effective in susceptible penicillinase-producing staphylococcal infections resistant to penicillin (including ampicillin). However, resistant staphylococcal strains have been recovered; resistance appears to occur in a slow stepwise manner. As with

all antibiotics, susceptibility studies should be performed.

Intramuscular and intravenous injections of Lincocin (lincomycin hydrochloride, Upjohn) are generally well tolerated. Instances of hypotension following parenteral administration have been reported, particularly after too rapid intravenous administration.

Sterile Solution (300 mg. per ml.) **Lincocin[®]** (lincomycin hydrochloride, Upjohn)

For further prescribing information, please see following page.



Lincocin[®]

Sterile Solution (300 mg. per ml.)

(lincomycin hydrochloride, Upjohn)
for respiratory tract, skin, soft-tissue, and
bone infections due to susceptible
streptococci, pneumococci, and staphylococci

Each preparation contains:

Lincomycin hydrochloride monohydrate equivalent to lincomycin base

250 mg. Pediatric Capsule 250 mg.
500 mg. Capsule 500 mg.
*Sterile Solution per 1 ml. 300 mg.
Syrup per 5 ml. 250 mg.

*Contains also: Benzyl Alcohol 9 mg.; and, Water for Injection—q.s.

An antibiotic chemically distinct from others available, indicated in infections due to susceptible strains of staphylococci, pneumococci, and streptococci. *In vitro* susceptibility studies should be performed.

CONTRAINDICATIONS: History of prior hypersensitivity to Lincocin (lincomycin hydrochloride). Not indicated in the treatment of viral or minor bacterial infections.

WARNINGS: Cases of severe and persistent diarrhea have been reported and at times drug discontinuance has been necessary. This diarrhea has been occasionally associated with blood and mucus and at times has resulted in acute colitis. This reaction usually has been associated with oral therapy, but occasionally has been reported following parenteral therapy. Although cross sensitivity to other antibiotics has not been demonstrated, make careful inquiry concerning previous allergies or sensitivities to drugs. Safety for use in pregnancy has not been established and Lincocin is not indicated in the newborn. Reduce dose 25 to 30% in patients with severe impairment of renal function.

PRECAUTIONS: Like any drug, Lincocin should be used with caution in patients having a history of asthma or

significant allergies. Overgrowth of non-susceptible organisms, particularly yeasts, may occur and require appropriate measures. Patients with pre-existing monilial infections requiring Lincocin therapy should be given concomitant antimonilial treatment. During prolonged Lincocin therapy, periodic liver function studies and blood counts should be performed. Not recommended (inadequate data) in patients with pre-existing liver disease unless special clinical circumstances indicate. Continue treatment of β -hemolytic streptococci infection for ten days to diminish likelihood of rheumatic fever or glomerulonephritis.

ADVERSE REACTIONS: *Gastrointestinal*—Glossitis, stomatitis, nausea, vomiting. Persistent diarrhea, enterocolitis, and pruritus ani. *Hemopoietic*—Neutropenia, leukopenia, agranulocytosis, and thrombocytopenic purpura have been reported. *Hypersensitivity reactions*—Hypersensitivity reactions such as angio-neurotic edema, serum sickness, and anaphylaxis have been reported, sometimes in patients sensitive to penicillin. If allergic reaction occurs, discontinue drug. Have epinephrine, corticosteroids, and antihistamines available for emergency treatment. *Skin and mucous membranes*—Skin rashes, urticaria, vaginitis, and rare instances of exfoliative and vesiculobullous dermatitis have been reported. *Liver*—Although no direct relationship to liver dysfunction is established, jaundice and abnormal liver function tests (particularly serum transaminase) have been observed in a few instances.

Cardiovascular—Instances of hypotension following parenteral administration have been reported, particularly after too rapid I.V. administration. Rare instances of cardiopulmonary arrest have been reported after too rapid I.V. administration. If 4.0 grams or more administered I.V., dilute in 500 ml. of fluid and administer no faster than 100 ml. per hour. **Local reactions**—Excellent local tolerance demonstrated to intramuscularly administered Lincocin. Reports of pain following injection have been infrequent. Intravenous administration of Lincocin in 250 to 500 ml. of 5% glucose in distilled water or normal saline has produced no local irritation or phlebitis.

HOW SUPPLIED: 250 mg. and 500 mg. Capsules—bottles of 24 and 100.

Sterile Solution, 300 mg. per ml.—2 and 10 ml. vials and 2 ml. syringe.

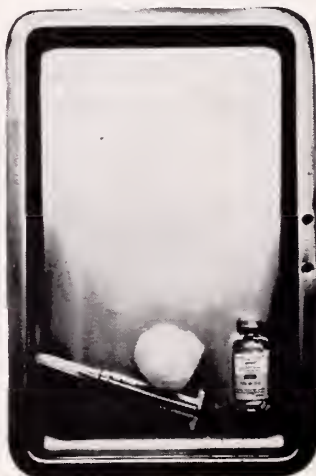
Syrup, 250 mg. per 5 ml.—60 ml. and pint bottles.

For additional product information, consult the package insert or see your Upjohn representative.

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IN ASTHMA IN EMPHYSEMA



*optional
therapy*



THE mudranes®

All Mudranes are bronchodilator-mucolytic in action, and are indicated for symptomatic relief of bronchial asthma, emphysema, bronchiectasis and chronic bronchitis. **MUDRANE tablets** contain 195 mg. potassium iodide; 130 mg. aminophylline; 21 mg. phenobarbital (Warning: may be habit-forming); 16 mg. ephedrine HCl. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline-phenobarbital-ephedrine combinations. **Iodide side-effects:** May cause nausea. Very long use may cause goiter. Discontinue if symptoms of iodism develop. **Iodide contraindications:** Tuberculosis; pregnancy (to protect the fetus against possible depression of thyroid activity). **MUDRANE-2 tablets** contain 195 mg. potassium iodide; 130 mg. aminophylline. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline. **Iodide side-effects and contraindications** are listed above. **MUDRANE GG tablets** contain 100 mg. glyceryl guaiacolate; 130 mg. aminophylline; 21 mg. phenobarbital (Warning: may be habit-forming); 16 mg. ephedrine HCl. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions** are those for aminophylline-phenobarbital-ephedrine combinations. **MUDRANE GG-2 tablets** contain 100 mg. glyceryl guaiacolate; 130 mg. aminophylline. **Dosage** is one tablet with full glass of water, 3 or 4 times a day. **Precautions:** Those for aminophylline. **MUDRANE GG Elixir.** Each teaspoonful (5 cc) contains 26 mg. glyceryl guaiacolate; 20 mg. theophylline; 5.4 mg. phenobarbital (Warning: may be habit-forming); 4 mg. ephedrine HCl. **Dosage:** Children, 1 cc for each 10 lbs. of body weight; one teaspoonful (5 cc) for a 50 lb. child. Dose may be repeated 3 or 4 times a day. Adult, one tablespoonful, 4 times daily. All doses should be followed with $\frac{1}{2}$ to full glass of water. **Precautions:** See those listed above for Mudrane GG tablets.

MUDRANE—original formula *First choice*

MUDRANE-2 *When ephedrine is too exciting or is contraindicated*

MUDRANE GG *During pregnancy or when K.I. is contraindicated or not tolerated*

MUDRANE GG-2 *A counterpart for Mudrane-2*

MUDRANE GG ELIXIR *For pediatric use or where liquids are preferred*

*Clinical specimens
available to physicians.*

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for grown-up colds

... that call for strong medicine
... the kinds that potent DRIXORAL is reserved for.

(Noses under 12 years of age
aren't eligible.) For the adult case of
nasal/sinus congestion:

a tablet for the day keeps congestion away,
a tablet at night, sleeper's delight.

b.i.d. Drixoral[®]

Sustained-Action Tablets

brand of dexbrompheniramine maleate 6 mg. and d-isoephedrine sulfate 120 mg.

The round-the-clock oral decongestant

Clinical Considerations: **Indications:** DRIXORAL is indicated for round-the-clock relief of symptoms of upper respiratory mucosal congestion in seasonal and perennial nasal allergies, acute rhinitis and rhinosinusitis, and eustachian tube blockage.

Contraindications: DRIXORAL should not be given to children under 12 years of age. DRIXORAL should not be administered to pregnant women or nursing mothers until the safety of this preparation for use during gestation and lactation is established. The preparation is contraindicated also in patients with severe hypertension and coronary artery disease. **Warnings:** As in the case of other preparations containing central nervous system acting drugs, patients receiving DRIXORAL should be cautioned about possible additive effects with alcohol and other central nervous system depressants (hypnotics, sedatives, tranquilizers). For the same reason they should be cautioned against hazardous

or driving a motor vehicle. **Precautions:** Isoephedrine-containing preparations should be used with caution in the presence of: hypertension; coronary artery disease; any other cardiovascular disease; glaucoma; prostatic hypertrophy; hyperthyroidism; diabetes. **Adverse Reactions:** The physician should be alert to the possibility of all possible adverse reactions which have been observed with sympathomimetic and antihistaminic drugs. These include: drowsiness; confusion; restlessness; nausea; vomiting; drug rash; vertigo; palpitation; anorexia; dizziness; dysuria due to vesicle sphincter spasm; headache; insomnia; anxiety; tension; weakness; tachycardia; angina; sweating; blood pressure elevation; mydriasis; gastric distress; abdominal cramps; central nervous system stimulation; circulatory collapse. **For more complete details, consult package insert or Schering literature available from your Schering Representative or Medical Services Department, Schering Corporation, Kenilworth, New Jersey 07033.**



**T₄ IS THE
PREDICTABLE
HORMONE BECAUSE
IT LOVES PROTEIN.**

SYNTHROID® (sodium levothyroxine) is pure synthetic T₄, the major circulating thyroid hormone. It is reliable to use because of its affinity for protein-binding sites in the blood. T₃ is more fickle. Sometimes it binds. Sometimes it doesn't. T₄ more *predictably* binds to protein.

Synthroid®
(sodium levothyroxine)

**ALL THYROID-
FUNCTION TESTS ARE
USEFUL IN
MONITORING
SYNTHROID THERAPY.**

No calculations are needed, test interpretation is simple.

Any of the commonly used T₄ thyroid function tests (P.B.I., T₄ By Column, Murphy-Pattee, Free Thyroxine) are useful in monitoring patients on T₄ because they *all* measure T₄. Patients on SYNTHROID are thereby easy to monitor because their results will fall within predictable, elevated test ranges. Of course, clinical assessment is the best criterion of the thyroid status of the drug-treated patient.

**TWO GOOD REASONS
WHY THE ROAD TO
NORMALIZED
THYROID STATUS IS
SO SMOOTH FOR THE
SYNTHROID PATIENT.**

(1) The onset of action of T₄ is gradual. It has a long in vivo "half-life" of over six days. (Occasional missed doses or accidental double-doses are of less concern because of this factor)¹; (2) since SYNTHROID contains only T₄, the potential for metabolic surges traceable to more potent iodides (T₃) is eliminated.

1. Latiolais, C. J., and Berry, C. C.: Misuse of Prescription Medications by Outpatients, *Drug Intelligence & Clin. Pharm.* 3:270-7, 1969.

TEST	HYPOTHYROID	SYNTHROID THERAPEUTIC NORMAL
P.B.I.	Less than 4 mcg %	6-10 mcg %
T ₄ By Column	Less than 3 mcg %	7-9 mcg %
T ₃ (Resin)	Less than 25%	27-35%
T ₃ (Red Cell)	Less than 11%	11.5-18%
Free Thyroxine	Less than 0.7 nanograms %	0.7-2.5 nanograms %
Murphy-Pattee	Less than 2.9 mcg %	4-11 mcg %

**Choose
the Smooth
Road** ...to thyroid replacement therapy



WHY DOES SYNTHROID COST LESS THAN SYNTHETIC DRUGS CONTAINING T₃?

Very simple. T₃ costs more to make synthetically than does T₄. So it is economically necessary for a synthetic thyroid medication containing T₃ to cost more than one containing T₄ alone. Synthetic combinations cost patients nearly 50% more than SYNTHROID³ because the T₃ costs more to start with; also there is the additional expense of formulating a tablet containing two active ingredients.

3. American Druggist BLUEBOOK, March, 1971.

KNOWLEDGE OF THE '70's CHALLENGES CUSTOMS CONCERNING DESICCATED THYROID DRUGS.

In the past, desiccated thyroid produced from animal glands was considered "good, and cheap." We now know that improved products are available and the price difference has narrowed to the point of being inconsequential. (SYNTHROID, for instance, costs patients about a penny a day more than brands of desiccated thyroid.)

What does this additional \$3.65 a year buy the patient? Quite a bit in terms of quality, reliability and service.

SWITCHING PATIENTS TO SYNTHROID IS EASY.

Switching present patients to SYNTHROID (or starting new ones) is a simple matter. SYNTHROID is available in the widest range of dosage strengths of any thyroid drug. Seven scored, color-coded tablet strengths are available plus a lyophilized injectable form for emergency or postoperative uses.

RESPONSE, RELIABILITY, SERVICE—COMPARISON OF FIVE PARAMETERS

PARAMETERS	DESICCATED THYROID U.S.P.	SYNTHROID® (sodium levothyroxine)
SOURCE OF HORMONE	Animal glands (swine, sheep, cows). Hormone content of glands and ratio of T ₃ -T ₄ varies by type of animal, season in which gland is harvested, and diet of animal. 1, 2, 3, 4, 5	Synthetically derived pure crystalline hormone. Because no animal protein is present, no objectionable odor occurs upon aging.
GENERAL ASSAY TECHNIQUE	"Its major disadvantage is inadequate standardization of hormonal content." ⁸	Unlike desiccated thyroid U.S.P., thyroxine does not require biologic standardization to establish its potency. 2, 6 Crystalline T ₄ is used. Purity is verified by paper chromatography. Content of tablets is standardized by weight.
CLINICAL RESPONSE	"T ₃ and T ₄ ratio varies according to gland source. Fluctuations in response can occur. Potency can vary." ³	"Sodium levothyroxine has been extensively used with satisfaction and is widely held to be superior to (desiccated) thyroid." ⁷ "There are well documented examples of patients who failed to respond satisfactorily to desiccated thyroid but subsequently responded to (sodium-I) thyroxine." ⁴
PREDICTABILITY	Failure of thyroid U.S.P. treated patients to show clinical improvement and/or lack of correlation in clinical findings to thyroid function test results has been frequently discussed in the literature. ^{8, 9, 10, 11, 12, 13, 14, 15, 16} Regardless of which factor or factors accounts for this phenomenon the fact remains that discrepancies do occur.	Test results predictably elevated. "... oral potency of this material is attested to by a uniformly good clinical response corroborated by a prompt and sustained increase in the serum PBI levels." ¹⁶

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See next pages for prescribing information.



PATIENTS CAN BE SUCCESSFULLY MAINTAINED ON A DRUG CONTAINING THYROXINE ALONE.

Thyroxine (T_4) is, as you know, the major circulating hormone produced by the thyroid gland. T_3 is also produced, in smaller amounts, and is active at the cellular level. For years it has been a working hypothesis among endocrinologists that T_4 is converted by the body to T_3 . In 1970 this process, called "deiodination," was demonstrated by Sterling and Braverman². T_4 does convert to T_3 , though the precise quantities are still being studied.

The conversion has been clinically demonstrated during the administration of T_4 to athyrotic patients. Their thyroid status is normalized on SYNTHROID alone, yet the presence of T_3 in these patients has been clearly shown.

CONSIDERATE LONG-TERM THERAPY FOR THE PATIENT.

Predictable patient response, of course, is more important than price. You do get complete clinical response with the single-entity synthetic, SYNTHROID. And, at a reasonable cost to the patient. In some short term situations, T_3 drugs can be useful but, in long term therapy, the smooth road provided by SYNTHROID may be the better route.

SYNTHROID, with its smooth road to complete thyroid replacement therapy, has been selected for more patients in the United States and Canada than any other brand of thyroid medication.

2. Braverman, L. E., Ingbar, S. H., and Sterling, K.: Conversion of Thyroxine (T_4) to Triiodothyronine (T_3) in Athyrotic Human Subjects, *J. Clin. Invest.* 49:855-64, 1970.

AS WITH ANY THYROID PREPARATION, CAUTIOUS OBSERVATION OF THE PATIENT DURING THE BEGINNING OF THERAPY WILL ALERT THE PHYSICIAN TO ANY UNTOWARD EFFECTS.

Side effects, when they do occur, are related to excessive dosage. Caution should be exercised in administering the drug to patients with cardiovascular disease. Read the accompanying prescribing information for additional data or write Flint Laboratories.

**Choose
the Smooth
Road**...to thyroid replacement therapy



0.05 mg.



0.1 mg.



0.15 mg.



0.2 mg.

FREE TAB-MINDER medication dispensers—color-coded in 4 dosage strengths—get patients off to a good start and encourage regular habit patterns. Contain free 4-weeks' supply of SYNTHROID, and are reusable for maintenance dosage.

Animal Gland

CYTOMEL (Sodium liothyronine) Synthetic T ₃	EUTHROID** (Liotrix) Synthetic T ₃ -T ₄	THYROLAR*** (Liotrix) Synthetic T ₃ -T ₄	Desiccated (Thyroid, USP) Cow, sheep or hog thyroid	PROLOID (thyroglobulin) Frozen hog thyroid	SYNTHROID (Sodium levothyroxine) Synthetic T ₄
Unscored 5 mcg.	N.A.	N.A.	unscored ¼ gr.	¼ gr.	0.025 mg.
N.A.	½	½	unscored ½ gr.	½ gr.	0.05 mg.
25 mcg.	1	1	unscored 1 gr.	1 gr.	0.1 mg.
N.A.	N.A.	N.A.	N.A.	1½ gr.	0.15 mg.
50 mcg.	2	2	unscored 2 gr.	2 gr.	0.2 mg.
N.A.	3	3	unscored 3 gr.	3 gr.	0.3 mg.
N.A.	N.A.	N.A.	unscored 5 gr.	5 gr.	0.5 mg.
N.A.	N.A.	N.A.	N.A.	N.A.	Injectable 500 mcg.

N.A. = Not Available Commercially

*Equivalents shown are chemical, and do not take into consideration individual patient variables. Clinical effect is approximate and should be monitored when converting a patient to SYNTHROID. This is particularly important in patients previously on desiccated thyroid. In these patients, lower doses of SYNTHROID may produce the same metabolic effect.

**Euthroid (#1 tablet) contains 60 mcg. of T₄ and 15 mcg. of T₃.

***Thyrolar (#1 tablet) contains 50 mcg. of T₄ and 12.5 mcg. of T₃.

Synthroid®

(sodium levothyroxine)



Indications: SYNTHROID (sodium levothyroxine) is specific replacement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiation, or antithyroid drugs. Indications for SYNTHROID (sodium levothyroxine) Tablets include myxedema, hypothyroidism without myxedema, hypothyroidism in pregnancy, pediatric and geriatric hypothyroidism, hypopituitary hypothyroidism, simple (nontoxic) goiter, and reproductive disorders associated with hypothyroidism. SYNTHROID (sodium levothyroxine) for Injection is indicated for intravenous use in myxedematous coma and other thyroid dysfunctions where rapid replacement of the hormone is required. The injection is also indicated for intramuscular use in cases where the oral route is suspect or contraindicated due to existing conditions or to absorption defects, and when a rapid onset of effect is not desired.

Precautions: As with other thyroid preparations, an overdosage may cause diarrhea or cramp, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving this drug should be observed closely for signs of thyrotoxicosis. If indications of overdosage appear, discontinue medication for 2-5 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, as Addison's Disease (chronic subcortical insufficiency), Simmonds's Disease (panhypopituitarism) or Cushing syndrome (hyperadrenism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarction. Side effects: The effects of SYNTHROID (sodium levothyroxine) therapy are slow in being manifested. Side effects, when they occur, are secondary to increased rates of body metabolism; sweating, heart palpitations without pain, leg cramps, and weight loss. Diarrhea, vomiting, and nervousness have also been observed. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. Careful observation of the patient during the beginning of any thyroid therapy will alert the physician to any untoward effects.

In most cases with side effects, a reduction of dosage followed by a more gradual adjustment upward will result in a more accurate indication of the patient's dosage requirements without the appearance of side effects.

Dosage and Administration: The activity of a 0.1 mg. SYNTHROID (sodium levothyroxine) TABLET is equivalent to approximately one grain thyroid, U.S.P. Administer SYNTHROID tablets as a single daily dose, preferably after breakfast. In hypothyroidism without myxedema, the usual initial adult dose is 0.1 mg. daily, and may be increased by 0.1 mg. every 30 days until proper metabolic balance is attained. Clinical evaluation should be made monthly and PBI measurements about every 90 days. Final maintenance dosage will usually range from 0.2-0.4 mg. daily. In adult myxedema, starting dose should be 0.025 mg. daily. The dose may be increased to 0.05 mg. after two weeks and to 0.1 mg. at the end of a second two weeks. The daily dose may be further increased at two month intervals by 0.1 mg. until the optimum maintenance dose is reached (0.1-1.0 mg. daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg., 0.3 mg., 0.5 mg., scored and color-coded, in bottles of 100, 500, and 1000. Injection: 500 mcg. lyophilized active ingredient and 10 mg. of Mannitol, N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chloride Injection, U.S.P., as a diluent. SYNTHROID (sodium levothyroxine) for Injection may be administered intravenously utilizing 200-400 mcg. of a solution containing 100 mcg. per ml. If significant improvement is not shown the following day, a repeat injection of 100-200 mcg. may be given.

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6 DATE OF ONSET	7 DATE FIRST CONSULTED	8. DUE TO PREGNANCY ¹ <input type="checkbox"/> YES <input type="checkbox"/>
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11 SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12 IF HOSPITALIZED NAME AND ADDRESS OF "

15 NAME AND ADDRESS OF OTHER C

COMPLETE IF PATIENT

16 TOTAL DISAP

FROM

17 P'

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APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

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PATIENT'S NAME

ADDRESS

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GIVE THE DATES OF TREATMENT BY INSERTING MONTH AND YEAR. INDICATE EACH
H—HOSPITAL V—HOME O—OFFICE OR CLINIC

MONTH AND YEAR												
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Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., certain elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently—they can both cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triam-

terene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

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(4) 2/5/71

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Also infections due to Gram-positive and Gram-negative organisms, when bacteriologic testing indicates appropriate susceptibility to the drug.

Contraindications: Hypersensitivity to tetracyclines.

Warnings: Photodynamic reactions have been produced by tetracyclines. Natural and artificial sun-

light should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used and serum estimations may be necessary with prolonged therapy. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood).

Precautions: Mycotic or bacterial superinfection may occur. Cases of gonorrhea with a suspected primary lesion of syphilis should have darkfield examinations before receiving treatment. In all other cases where concomitant

syphilis is suspected, monthly serological tests should be performed for at least 4 months.

Plasma prothrombin levels may be depressed, patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage. In long-term therapy, periodic laboratory evaluation of hematopoietic, renal and hepatic organ systems should be performed.

Adverse Reactions: Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. Infants may develop increased intracranial pressure with bulging fontanels. Hemolytic anemia, thrombocytopenia, neu-

tropenia, and eosinophilia have been reported.

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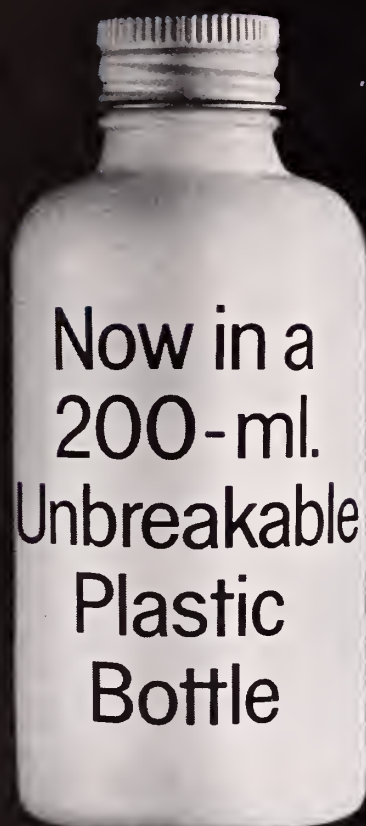
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The Editors and Staff
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Oklahoma State Medical Association
extend to you and your loved ones
our best wishes for
A Joyous Holiday and
A Happy New Year.





As of December 1st, I will have served seven months of my term as your President. At this point in time, an inventory of progress is expedient. It may be appropriate also for chairmen of the many committees to review their

charge and determine whether a contribution might be made before the completion of their term.

The Planning Committee, chaired by Doctor Ed Calhoun, continued the fine work of Doctor Denyer, immediate past-chairman, and established a Foundation for Peer Review, the articles for which have been studied by the medical society's attorney and now await to be presented to a special called meeting of the House of Delegates. Also formed was the Foundation for Community Medical Care, to which have been transferred the financial contributions of each member to be used as loans to medical students, who will practice in the rural communities.

Lack of space does not permit listing of all of the committees and their chairmen who have been active. One should include the Medical Insurance Review Committee, chaired by Doctor Howard Keith, the members of which have expended many man-hours adjudicating claims of third party carriers. Details of the work of this committee can be found in the November, 1971 issue of the OSMA News.

The Legislative Committee, Doctor R. Barton Carl, Chairman; the Medical-Legal Committee Co-Chaired by Doctor Jack Richardson and attorney Joe Glass; the Alcoholism and Drug Abuse Committee, Doctor Charles Smith, Chairman; the Medical Center Liaison Committee, Doctor Harold Calhoun, Chairman; the Prepaid Medical Care Committee, Doctor Charles Bodine, Chairman, have been active.

The Annual Meeting Committee, Doctor John Blaschke, General Chairman and Doctor Dale Groom, Scientific Program Chairman, have made considerable progress and merit special commendation. The preliminary program reveals a unique and innovative format which I am sure will make the 1972 meeting one of the most interesting in many years.

Unfortunately, when there is sunshine there may also be rain. A menacing cloud over our relationship with Blue Shield forecasts the possibility of a disengagement, the culmination of a series of events occurring over the past three years. Discussions between the Trustees of the Board of Blue Shield and the Oklahoma State Medical Association have apparently resulted in an impasse.

I wish to express my appreciation to all chairmen and committee members for their cooperation. Having spent much time at the OSMA headquarters, I have become better cognizant of the invaluable assistance of Messrs. Blair, Bickham, and Kelsay of the headquarters staff. □

Sincerely,

Lucien G. Pascoe

Incidence of Rheumatic Fever and Rheumatic Heart Disease in Oklahoma

STANLEY L. SILBERG, Ph.D.
STANLEY W. FERGUSON, Ph.D.
PAUL S. ANDERSON, JR., Ph.D.

*A survey of all Oklahoma hospitals
revealed that rheumatic fever and
rheumatic heart disease may still
constitute an important health menace.*

INTRODUCTION

SINCE THE ADVENT of certain antibiotics and their use as a deterrent of streptococcal infection, it would be reasonable to assume that the number of cases of rheumatic fever and rheumatic heart disease would decline to the point of eradication. The significance of these disease entities as a public health problem may readily be questioned if one looked at the official reports throughout the United States. There is a wide disparity of rheumatic fever cases reported in the various states and districts. Among 36 states and the District of Columbia, in which rheumatic fever data were available 27 (75 percent) reported less than 50 cases for 1969.³ However, reporting in other states suggested that this disease was not yet extinct. In 1969, three states reported 50 to 89 cases, five reported over 100

cases and two well over 500. There is little doubt that rheumatic fever and rheumatic heart disease are grossly under-reported in official statistics as indicated by several epidemiologic studies which have revealed unexpected numbers of cases.

Based on a population of 500,000 students representing 137 colleges, Marienfeld, *et al.*² estimated an average prevalence rate of 17.5 rheumatic fever cases per 1,000 college students over a period of five years (1956-1960). In the same study, the prevalence rate for rheumatic heart disease was 5.7 cases per 1,000 students. In a 1962 survey among Kansas physicians, Peckenschneider, *et al.*⁴ tabulated 401 new cases of rheumatic fever in which only 648 of 1,850 questionnaires were returned. From their data, the present authors calculated an overall incidence rate of 18.4 cases per 100,000 population. Another statewide survey in 1962 of all hospitals, physicians, and osteopaths in Missouri⁵ revealed conservative period prevalence rates of 28.8 and 49.6 cases per 100,000 population of rheumatic fever and rheumatic heart disease, respectively.

These and other studies^{1,6} tend to support the concept that rheumatic fever and rheumatic heart disease still constitute an important public health menace. In Oklahoma, there were eight cases of acute rheumatic fever officially reported in 1969.³ The search for a more realistic estimate of this and

rheumatic heart disease is the purpose of this report.

METHODS AND PROCEDURES

This study of the incidence of rheumatic fever and rheumatic heart disease in Oklahoma was designed as a cooperative endeavor involving the Department of Biostatistics and Epidemiology of the University of Oklahoma's School of Health and the Oklahoma State Health Department. In addition, the Oklahoma Hospital Association was solicited for its valuable aid.

Utilizing the official 1970 hospital directory, a request for information was sent to the administrators of the 171 licensed hospitals throughout Oklahoma requesting the number of newly diagnosed cases of rheumatic fever and/or rheumatic heart disease occurring for the year 1969 (Jan. 1st-Dec. 31st), the latest period for which the records were considered complete.

In addition to the number of cases, certain vital data were requested such as age, sex, race and county of residency for each patient. Names were requested solely for the purpose of avoiding duplication and the confidentiality of such information was stressed. Along with the report form, a personal letter was sent to each hospital administrator explaining the details of the study. Attached also was a memo from the executive director of the Oklahoma Hospital Association sanctioning the study.

After a reasonable length of time, a second, and when necessary, a third request for information was sent to those administrators who had not replied. Finally, a telephone call was made to those who still had not responded.

RESULTS

Among the 171 requests for information sent to all licensed hospitals in Oklahoma, eight had closed and records were not available. Information from two military hospitals in the state was deleted from the analysis because cases from such military populations would not likely reflect Oklahoma residency.

Table 1

Frequency Distribution of Hospitalized Cases of Rheumatic Fever and Rheumatic Heart Disease by Age and Sex—Oklahoma, 1969

Age Groups†	Rheumatic Fever			Rheumatic Heart Disease		
	M	F	Total	M	F	Total
0 - 4	0	1	1	0	0	0
5 - 9	15	12*	27	1	3*	4
10 - 14	17**	19	36	5**	3	8
15 - 19	10	9	19	2	0	2
20 - 24	3	4	7	4	1	5
25 - 34	2	5	7	1	5	6
35 - 44	3	3	6	3	6	9
45 - 54	0	2	2	10	8	18
55 - 64	0	1	1	9	15	24
65 & over	1	0	1	9	14	23
TOTAL	51	56	107	44	55	99

†Age grouping used to coincide with population at risk obtained from 1970 census (1st tapes)

*Includes one case of concurrent R. F. and R. H. D.

**Includes two cases of concurrent R. F. and R. H. D.

Only one hospital failed to cooperate in the study; thus, usable information was collected from 160 of the remaining 161 hospitals, representing virtually 100 percent participation.

The frequency distribution of hospitalized cases, by age and sex is shown in Table 1. There were a total of 206 reported hospitalized cases of rheumatic fever and/or rheumatic heart disease in Oklahoma for 1969; however, this total includes three cases diagnosed as concurrent rheumatic fever and rheumatic heart disease. These cases appear under each disease category thereby increasing the total number by three.

Incidence rates for each disease by age and sex are presented in Table 2. The population used for the calculation of rates was based on the first tapes of the 1970 census.

The crude overall incidence rate for rheumatic fever was 4.2 and that for rheumatic heart disease was 3.9 per 100,000 population. As expected, the incidence for rheumatic fever was high in the five to nine and ten to 14 year age groups with rates of 11.3 and 14.2 per 100,000 population, respectively. Incidence of the disease was quite low in the less than five year age group and in the 45 and over age groups. In fact, there was a remarkably steady downward trend in incidence of rheumatic fever after 14 years of age. There appeared to be little disparity

between male and female rates throughout all ages, with an overall rate for males of 4.1 and for females, 4.3 per 100,000 population.

In contrast to rheumatic fever, the incidence of rheumatic heart disease tends to increase with age from 20 years to over 64 years of age. The highest incidence rate of the disease occurred in the age group 55 to 64 (9.5 per 100,000 with only a slight decrease in the 65 and over group (7.7 per 100,000). A slight peaking occurred in the ten to 14 age group, however, the increase was probably more artifact than real (see Discussion). The overall female rate of 4.2 was somewhat higher than the male rate of 3.5, and the female incidence increased more steadily and uniformly than that of males for the ages 20 and over.

It was difficult to determine geographic patterns or trends because the frequency in

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Stanley W. Ferguson, Ph.D., graduated from the University of Oklahoma Medical Center, where he is presently Assistant Professor of the Department of Biostatistics and Epidemiology and State Epidemiologist, Oklahoma State Health Department. He is a member of the Infectious Diseases Society of America, the Association of State and Territorial Epidemiologists and the Society for Epidemiologic Research.

Paul S. Anderson, Jr., Ph.D., graduated from Yale University in 1957. He is now Professor and Chairman of the Department of Biostatistics and Epidemiology at the University of Oklahoma School of Medicine. Doctor Anderson holds memberships in the American Association for the Advancement of Science, the American Public Health Association, the Association of Teachers of Preventive Medicine and the New York Academy of Sciences. He is secretary of the Statistics Council, American Public Health Association.

Table 2
Incidence Rates of Hospitalized Cases of Rheumatic Fever and Rheumatic Heart Disease By Age and Sex—Oklahoma, 1969

Age Groups	Incidence Rates per 100,000 population†					
	Rheumatic Fever			Rheumatic Heart		
	M	F	Total	M	F	Total
0 - 4	0.0	1.0	0.5	0.0	0.0	0.0
5 - 9	12.3	10.3*	11.3	0.8	2.6*	1.7
10 - 14	13.1**	15.3	14.2	3.9**	2.4	3.2
15 - 19	8.1	7.6	7.0	1.6	0.0	0.8
20 - 24	2.9	3.9	3.4	3.8	1.0	2.4
25 - 34	1.3	3.2	2.3	0.7	3.2	2.0
35 - 44	2.2	2.0	2.1	2.2	4.1	3.2
45 - 54	0.0	1.4	0.7	7.3	5.5	6.4
55 - 64	0.0	0.7	0.4	7.6	11.1	9.5
65 & over	0.8	0.0	0.3	7.1	8.1	7.7
TOTAL	4.1	4.3	4.2	3.5	4.2	3.9

†Age grouping and population based on 1970 census (1st tapes)

*Includes one case of concurrent R. F. and R. H. D.

**Includes two cases of concurrent R. F. and R. H. D.

each disease category distributed over 77 counties was too small to calculate meaningful rates. However, it was of interest to note that there were several counties in the state that had very high incidence rates of rheumatic fever and rheumatic heart disease. These rates were much higher than in the two densely populated Tulsa and Oklahoma counties. Considering rheumatic fever and rheumatic heart disease together, and counties yielding arbitrarily five or more cases, the incidence rates of 14 counties ranged from 4.6 to 66.4 per 100,000 population. The rates of ten counties were higher than the average incidence rate of 8.1. Among these, the rates of three counties ranged from 10.4 to 14.1; those of six counties from 21.5 to 39.4; and for one, a rate of 66.4. Only four counties had rates below the state average.

DISCUSSION

If one reviewed the official Oklahoma reported cases of rheumatic fever alone for 1969, the eight cases recorded would hardly justify this disease as a public health menace. Such a small case load might very well be considered evidence that the disease is being eradicated. However, selecting hospitals as only one source of cases, 107 newly diagnosed rheumatic fever patients were reported in Oklahoma for the one-year period, 1969. In addition, the 99 cases of rheumatic heart disease during the same time period

increases the total to a substantial 206. Based on a similar survey completed in Missouri,⁵ one might expect at least a 50 percent increase in total cases in Oklahoma if non-hospitalized patients were also surveyed. Unfortunately, the latter survey was not financially possible to pursue. Thus, the overall combined incidence rate of 8.1 reported hospitalized cases of rheumatic fever and/or rheumatic heart disease per 100,000 population in Oklahoma for 1969 should be considered a very conservative estimate of the actual number of cases occurring in the state. However, assuming that hospital reporting was accurate and complete, the incidence rate of 4.2 for rheumatic fever and 3.9 per 100,000 for rheumatic heart disease does reflect a reasonable picture of the magnitude of the problem among hospitalized patients.

The fact that 78 percent of the total number of cases of rheumatic fever occurred in persons less than 20 years of age and 66 percent of rheumatic heart disease cases occurred in the 45 and over ages, substantiates the traditional concept that the former is a disease of the younger, and the latter a disease of the older ages. Since rheumatic heart disease is the sequela, while rheumatic fever is an acute disease with or without heart damage, such age peakings would be expected. The peaking of rheumatic heart disease in the ten to 14 year age group is difficult to explain. Although the high rate coincides exactly with that of rheumatic fever, one would expect that heart damage would occur at some later time in life as a manifestation of earlier recognized rheumatic fever. On the other hand, it may be possible that a rise in heart disease in this young age group may be the normal consequence of *unrecognized* rheumatic fever which occurred earlier. In the Missouri study,⁵ there was no evidence of peaking in the ten to 14 age group. Since the number of cases was small, the observation was considered of questionable importance; however, in future studies of this nature one should examine the data closely to determine if similar trends occur.

Although not exceptionally high, the incidence rates of reported hospitalized cases

of rheumatic fever and rheumatic heart disease likely represent as many new cases as several other traditionally reportable diseases in Oklahoma. An exact comparison with other diseases reported in 1969, would not be feasible, since it is not known how many of these were also grossly under-reported. Rheumatic fever is listed among Oklahoma's notifiable diseases, but falls drastically short of the estimated case load. Although the problems of reporting these diseases are little different from those of others, the subsequent development of a damaged heart and its consequences should emphasize the importance of reporting these diseases. It is not only a matter of failing to report the occurrences, but equally important is the fact that like so many other diseases, cases of rheumatic fever and rheumatic heart disease are either so mild that the patient fails to seek medical attention, or they are incorrectly diagnosed. The number of such cases cannot be evaluated.

It was of interest that several counties in Oklahoma had very high incidence rates, while others were low for both diseases combined; however, at present, one must interpret such findings with caution, since the calculation of rates, to determine geographical patterns, was based on very small numbers of cases for this one-year period. Four counties produced ten to 32 combined cases (rheumatic fever and rheumatic heart disease); five to seven cases were reported in 11 counties and one to four combined cases for the remaining counties. A statistical test (modified Student's *t*) was used to determine if the differences in county rates were significantly higher than the state average of 8.1 per 100,000. Only three counties had sufficient numbers of cases to warrant the test and in all three, the incidence rates were in excess of 30 cases per 100,000. Using a 0.10 level of significance, the rate for one county was significantly higher than the overall average of 8.1, and the rates for the other two counties were of borderline significance. Before drawing conclusions, however, it would be necessary to examine the accuracy and completeness of hospital records and hospital utilization. Such factors often have an important effect on case rates which could lead to false interpretations.

Rheumatic fever and rheumatic heart disease are but two examples of diseases which are considered by some as rare and no longer important. As indicated in this study, such optimistic thoughts must be delayed until a search is made of the disease to determine more accurately the extent of the problem.

The evidence in this survey would suggest that rheumatic fever and rheumatic heart disease may still constitute an important public health problem. Above all, the reporting and enumeration of these diseases as well as others are essential before measures of control can be effected.

SUMMARY

A statewide survey of Oklahoma hospitals was conducted to determine the incidence of rheumatic fever and rheumatic heart disease during the year 1969.

With nearly 100 percent of the questionnaires returned from all hospitals in the state, information revealed a total of 206 new cases of both diseases combined. Among these, 107 were diagnosed as rheumatic fever and 99 as rheumatic heart disease. For comparison, only eight cases of rheumatic fever were officially reported for the state in 1969 (rheumatic heart disease was not an officially reported disease).

Using population data from the 1970 census, the incidence rates for rheumatic fever and rheumatic heart disease were 4.2 and 3.9 per 100,000 population, respectively.

Although there was little important difference between male and female incidence rates, there were marked age disparities be-

tween the two diseases. For rheumatic fever, 78 percent of the total number of cases occurred in persons less than 20 years of age; for rheumatic heart disease, 66 percent of the cases were in the 45 and over ages.

For one Oklahoma county, the incidence rate of both diseases combined was statistically higher than that for the state average, while the higher rates found in two others were of borderline significance. However, caution was emphasized in interpretation since the numbers of cases distributed over 77 counties was small.

The results of this study suggest that rheumatic fever and rheumatic heart disease may still be of public health importance in Oklahoma. The need for better reporting was stressed.

ACKNOWLEDGMENT

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A New Look at Vitamin E

in Clinical Medicine

MARIE BALSLEY, R.D.
E. W. SPECKMANN, Ph.D.

In its role as biological antioxidant, the relation of vitamin E to many clinical problems has been suggested, including certain types of anemia and gastrointestinal disorders.

THE ABILITY of vitamin E to prevent the development of certain pathological conditions in animals was discovered over 40 years ago. Deficiency symptoms vary in different animal species, but may affect almost any tissue in the body. For example, in the rat, vitamin E is required for maintaining the health of the brain, vascular system, red blood cells, gonads, liver, and incisor teeth.¹ However, in spite of a great deal of research, a gap exists between experimental data on vitamin E and agreement on its value in clinical medicine.²

Unequivocal explanations are still lacking for the wide variety of symptoms due to vitamin E deficiency in different animal species and for the relationships of vitamin E to a number of dietary components, notably polyunsaturated fatty acids (PUFA), selenium, and sulfur amino acids.

Reluctance to accept new and sound con-

cepts about the relevance of vitamin E to clinical medicine results in part from disappointing results of clinical trials of vitamin E therapy in a wide variety of diseases.^{2,3} Conditions in man which seemed similar to the lesions of vitamin E deficiency in animals were not responsive to vitamin E therapy. However, it appears that there is a basis for considering vitamin E therapy in a number of conditions including the feeding of premature infants, diets containing high levels of polyunsaturated fatty acids; fat malabsorption syndromes; and absence or deficiency of beta-lipoproteins in children.³

Recent review articles and symposia⁴⁻⁹ attest to the continuing controversy as well as interest in vitamin E and related subjects. Although the clinical value of vitamin E is still controversial, this subject requires reconsideration within the context of a unifying concept of vitamin E as a biological antioxidant which protects body cells from lipid peroxidation.¹⁰ Lipid peroxidation at the cellular level is a process in which not only vitamin E, but many other nutrients and metabolites are important. Thus, one of the difficult things about vitamin E is to determine its relationship to other components in this process and the optimum diet in terms of a variety of nutrients for the biological antioxidant function. The absolute amount of vitamin E in the diet is probably not as important as its ratio to other dietary components.

A number of recent reviews have discussed the mechanism of free-radical pathology and lipid peroxidation,¹⁰⁻¹⁹ with implications for the rate of aging and the effect of a variety of toxic substances, including ozone in air pollution and ionizing radiation. Only an abbreviated description of this reaction is possible here; further details can be found in these reviews. A free radical is defined as "any chemical species that has an odd number of electrons."¹⁰ Free radicals including those from PUFA peroxidation are an extremely reactive species. (This peroxidation reaction should be distinguished from oxidation occurring normally in the cells for the generation of energy.)

The reactivity of PUFA was well known even before much was known about the physical chemistry of fats and the existence of free radicals. Certain food processes, such as the milling of flour and the hydrogenation of vegetable oils, were based empirically on removing or changing PUFA to improve shelf life. Techniques such as electron spin resonance have permitted the detection and measurement of free radicals. Free radicals involve other compounds in addition to lipids, but the occurrence of free radicals in lipid peroxidation is emphasized here. The process of lipid peroxidation begins with the formation of a PUFA free radical, the addition of oxygen, and the reaction of the peroxy free radical with another PUFA. The free radicals produced initiate a cyclic chain reaction which continues unless compounds such as vitamin E act as chain breakers and stop the reaction. In addition to their effect on the chemical structure of PUFA, free radicals cause chemical changes in nucleic acids, in enzymes, and in other proteins which destroy their function.

Membranes, both cellular and subcellular, are perhaps the major sites of damage. According to current concepts, certain essential fatty acids (PUFA) serve an essential role in the structure and function of membranes, while vitamin E and other antioxidants prevent or limit the peroxidation of these PUFA.¹⁵ Peroxidation damages subcellular membranes and thus impairs functions within the cell, and may end up by destroying the entire cell. Damage to sub-

cellular membranes results in inactivation of the mitochondria, which produce energy, and microsomes, which are important in drug metabolism and protection from toxins. At a somewhat slower rate, lysosomal membranes are peroxidized; when these membranes are ruptured, hydrolytic enzymes are released into the cell that produce widespread damage to cell components. The end result of the chain of events initiated by lipid peroxidation is cell death and the accumulation in tissue of ceroid or pigmented tissue that contains peroxidized lipids and cross-linked proteins.

Because of the difficulty of measuring free-radical reactions in the living animal, the concept of lipid peroxidation is based to some extent on what is known of the chemistry of the free-radical reaction and test tube experiments. Strong evidence favoring the concept, however, is the presence of ceroid or lipofuscin pigmented material in humans and in animals as a function of aging and also as a pathological sign of vitamin E deficiency in animals.^{13, 15} Other lines of evidence are: (a) the formation in animals of products of vitamin E that indicate that this vitamin has stopped an oxidative reaction²⁰ and (b) the ability of certain antioxidants structurally dissimilar to vitamin E to replace vitamin E, showing the essential nature of the antioxidant function.¹⁵

Biological lipid peroxidation is a relatively non-specific reaction, and a number of antioxidant and reducing compounds, acting independently or in synergism with vitamin E, can control this reaction. This includes selenamino acids, small amounts of sulfhydryl compounds, including sulfur-containing amino acids, and a metabolite, ubiquinol, which depends for its synthesis on dietary sources of many nutrients. The need for these biological antioxidants is determined partially by the amount of PUFA in a given tissue, and also by substances acting as pro-oxidants, such as iron in hemoglobin. The complex interrelationships between lipids, pro-oxidants, and biological antioxidants make it difficult to isolate the effect of vitamin E.

Part of the controversy about the mode of action of vitamin E is concerned with whether it serves solely as a biological antioxidant

or whether it has some additional or broader function. McCay, *et al.*²¹ have proposed a function for alpha-tocopherol: stabilization of the microsomal membrane from attack by free radicals produced by normal enzyme function (TPNH oxidase). This theory differs only from the antioxidant concept in that it defines a specific metabolic reaction involving an oxidative enzyme which initiates lipid peroxidation. This work is based mainly on *in vitro* studies of microsomes from rat liver.

Scott²² discussed the complex interrelationships between vitamin E, selenium, cystine, and linoleic acid in the chick. He concludes that not all the beneficial effects of vitamin E in various tissues can be attributed to a simple antioxidant effect of the vitamin.

Green and Bunyan²³ have critically reviewed the information about vitamin E and list some studies that suggest other functions for vitamin E than as a biological antioxidant.

VITAMIN E STATUS IN THE UNITED STATES

The essentiality of vitamin E for humans has been recognized by the Food and Nutrition Board, National Research Council, and a Recommended Dietary Allowance (RDA) for vitamin E (25 to 30 mg alpha-tocopherol daily for adults) was established

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in 1968.²⁴ Thus, although many aspects of vitamin E metabolism in man and its interrelationships with other nutrients remain controversial, consensus has at least been reached that humans require vitamin E. There is also general agreement that needs for vitamin E are related to the amount of PUFA in the diet and in the tissues.

Inclusion of a nutrient in the RDA implies a need for considering this nutrient in evaluating current diets and in planning normal and therapeutic diets. There are several compilations of the vitamin E content of food,^{25, 26} but information on vitamin E content is not included in food tables covering the array of nutrients commonly considered in diet planning. The recommended dietary allowance has been stated in terms of alpha-tocopherol but there are eight naturally occurring tocopherols. Forms other than alpha-tocopherol predominate in certain common foods and there is insufficient information on their biological activity. Based on chemical analyses of foods in a variety of menus, Bunnell, *et al.*²⁷ estimated the daily intake of adults in this country as ranging from 2.6 to 15.4 mg with an overall average of 7.4 mg. This is considerably less than the 25 to 30 mg recommended for adults.²⁴ Processing and storage losses of vitamin E in frozen foods, cereals, and vegetable oils may be considerable.²⁵⁻³¹

In plants, a relationship appears to exist between vitamin E and PUFA content. This in itself indicates that vitamin E functions as a biological antioxidant. This may also be true of animal foods. While the vitamin E content of cow's milk is low, it appears to be sufficient to balance the amount of PUFA in milk. Fish oils, however, apparently contain insufficient vitamin E to serve as a biological antioxidant for the highly unsaturated fatty acids they contain.³

In foods, the effect of processing, the selection of certain parts of the organism for consumption, and the biological availability of different forms of tocopherol may change the vitamin E/PUFA ratio in the food as consumed by man.⁶ One study indicated that soybean oil did not contain enough vitamin E to balance its PUFA content.³⁰ Thus, the increasing consumption of vegetable oils, chiefly in the form of soybean oil, may not

have been matched by an appropriate increase in vitamin E intake.

Recommendations for dietary vitamin E are usually stated in terms of a desirable ratio of vitamin E to PUFA, which has been estimated at 0.6 mg vitamin E per gm PUFA.³² However, this concept has its limitations since the critical factor is the vitamin E/PUFA ratio in a given tissue.¹⁹ Although dietary PUFA undoubtedly influence the PUFA content of tissues, diet-tissue relationships are complex and vary in different tissues and different species. Effects of other dietary fatty acids, competitive relationships between essential and nonessential PUFA in various tissues, and homeostatic mechanisms for maintaining a certain level of PUFA may influence the tissue PUFA level. How such factors operate in a given tissue helps to determine the antioxidant need and the site of appearance of deficiency symptoms, whether encephalomalacia in chick brain, muscular dystrophy in the rat, or *in vitro* hemolysis of red blood cells in a number of species including man.

In part, the RDA for vitamin E in adults is based on the long-term experiments on humans by Horwitt, *et al.*³³ at Elgin State Hospital. These researchers found that the need for vitamin E ranged from five mg per day on diets low in PUFA to 30 mg when diets high in PUFA (60 gm corn oil daily) were fed. Criteria of vitamin E adequacy in these studies were plasma vitamin E and the peroxide hemolysis test of red blood cells.

These studies also showed that on a diet high in PUFA, PUFA continued to accumulate in adipose tissues for several years. Evidence indicates that tissue tocopherol is stored less efficiently than tissue PUFA.³⁴ Thus, tissue deficiency of tocopherol may occur in situations where the PUFA consumption has been unusually high. These studies indicate that greater attention should be focused on the vitamin E needs of persons who have built up a high tissue level of PUFA by consuming diets high in PUFA such as are currently being recommended for reducing serum cholesterol. This applies to persons who have discontinued such diets as well as to those who are still following such diets, or have temporary periods of nonadherence.

CLINICAL PROBLEMS RELATED TO VITAMIN E

The relevance of vitamin E to certain types of anemia has attracted particular attention in clinical medicine. Vitamin E deficiency has been shown to be related to anemia in a variety of animal species, including monkeys, trout, pigs, and rats.² As early as 1957, Dinning and Day³⁵ found that anemia was the first sign of vitamin E deficiency in monkeys. Their experiments indicated that this anemia was in part due to accelerated hemolysis (destruction of red blood cells) and in part due to a block in red blood cell maturation. Fitch³⁶ believes that the primary cause of this vitamin E dependent anemia in monkeys lies in the formation of red blood cells in the bone marrow.

Darby² summarized studies showing the existence of vitamin E-responsive anemias and blood changes in children suffering from protein-calorie malnutrition, in premature infants, and in both premature and full-term infants fed formulas high in PUFA and containing insufficient amounts of vitamin E. Ritchie, *et al.*³⁷ described hemolytic anemia and edema responsive to vitamin E therapy in premature infants who were receiving commercial formulas with added iron and high content of PUFA. These formulas had a low ratio of vitamin E to PUFA. Such studies indicate the importance of the vitamin E/PUFA ratio in early life when tissue stores of vitamin E are low. Among the difficulties inherent in the unmistakable identification of vitamin E deficiency as a factor in specific cases of anemia, Darby² cited the complex interaction of nutrients both in the function of biological antioxidants and in the life span of red blood cells. He concluded that the hematological importance of vitamin E is so evident that research on pathological conditions associated with disorders of absorption, transport, or metabolism of vitamin E should be increased.

In blood, vitamin E is transported in beta-lipoproteins; thus lipid or beta-lipoprotein abnormalities cause variations in plasma vitamin E that may be unrelated to dietary vitamin E.^{2, 38} Individuals with a hereditary deficiency of beta-lipoproteins have abnormalities of red blood cells, low or absent plasma vitamin E, and defective fat absorp-

tion.² Some of the symptoms of this disorder may be related to vitamin E deficiency.³⁹ The relationship of vitamin E to serum lipids is also noted in patients with high blood lipids. Lowering serum lipids by either of two drugs, clofibrate or a chemically similar drug (SU-13437), resulted in parallel decreases in vitamin E levels.⁴⁰ Whether these decreases had any clinical significance is not known.

Signs of vitamin E deficiency have been found in patients with a wide variety of gastrointestinal disorders, including pancreatic diseases such as cystic fibrosis; impaired fat absorption of varied etiology; and after gastric surgery.^{39, 41-43} Malabsorption of vitamin E could be correlated with the degree of fat malabsorption.

Binder and Spiro³⁹ have suggested that tocopherol deficiency results only after at least six to twelve months of fat malabsorption and occurs in three progressive stages: First, a gradual depletion of tocopherol without physiologic abnormalities; second, increased erythrocyte hemolysis and creatinuria; and finally, more severe depletion marked by ceroid deposition and muscular lesions resembling muscular dystrophy. Some of the apparent contradictions, such as the occurrence of vitamin E deficiency in some cases of fat malabsorption and not in others, may be due to the presence of other antioxidants and complex tissue relationships between vitamin E and PUFA. Low fat absorption may actually lower the amount of PUFA in tissues and the vitamin E requirement in some cases.

In the reactions occurring between peroxidizable lipids in the cell and biological antioxidants, evidence indicates that certain environmental agents act as pro-oxidants which accelerate the reaction. Such environmental agents include ozone in air pollution, radiation, carbon tetrachloride, alcohol, and chlorinated hydrocarbon pesticides such as DDT.¹⁵ The amount of biological antioxidants present, such as vitamin E, can affect the toxicity of such agents. In one study, vitamin E exerted a protective effect on rats exposed to ozone in terms of lowered mortality, lung edema, and presence of fluorescent products indicative of lipid peroxida-

tion damage. Complex dermatological problems such as acne and dermatitis may involve lipid peroxidation and further research is suggested on the possibility of localized free-radical damage.¹⁵

Consideration of the peroxidation reaction also suggests that vitamin E may be of importance in a wide variety of clinical situations, such as the use of hyperbaric oxygen, administration of high concentrations of oxygen to premature infants, and the metabolism and mode of action of certain drugs.^{10, 14, 39}

SUMMARY

Although many early trials of vitamin E therapy in a variety of diseases yielded negative results, recent research on the mode of action of vitamin E encourages a new appraisal of the role of this vitamin in clinical medicine. The recognition of vitamin E as an essential nutrient for man and the importance of the ratio of the vitamin E to polyunsaturated fatty acids (PUFA) in the diet has increased the need to determine whether customary diets in this country, as well as certain therapeutic diets containing high amounts of PUFA, are adequate with respect to vitamin E.

A concept of vitamin E as a biological antioxidant that limits lipid peroxidation reactions and protects cells from membrane damage has been developed that is consistent with many lines of evidence. This peroxidation reaction is limited not only by vitamin E but also other biological antioxidants. It is accelerated by pro-oxidants naturally occurring in tissues, such as iron in hemoglobin, as well as environmental agents such as ozone in air pollution. Vitamin E therapy has been suggested for certain types of anemia, such as the anemia of premature infants and the anemia found in protein-calorie malnutrition in some areas. Vitamin E deficiency is believed to occur frequently in cases of fat malabsorption and certain other gastrointestinal disorders. □

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An Introduction to William Stewart Halsted

G. RAINEY WILLIAMS, M.D.

Fifty years after his active surgical career, William Stewart Halsted stands as the most important single figure American Surgery has produced. This manuscript is a modification of a lecture delivered by the author to the history of medicine society at the University of Oklahoma School of Medicine in early 1971.

THE HALSTED family has produced many men of note. The family has been traced to 16th Century England and an estate identified as High Halsted. The first Halsteds came to America in 1660 and the family centered in the New York-New Jersey area. Doctor Halsted's grandfather, William Mills Halsted, founded a very successful dry goods importing firm and became a financial and philanthropic leader in New York, among other things being a founder of the Union Theological Seminary. There were three physicians in Doctor Halsted's direct an-

cestral line but apparently none with whom he had much contact. Doctor Halsted's father continued in the importing business and is described as a rigid disciplinarian.

Doctor Halsted, the first of four siblings, was born in 1852, raised in an atmosphere of controlled plenty, attended Andover and entered Yale in 1870. His principle achievements at Yale were athletic, and he was captain of the football team in his senior year. He appears to have participated in a number of college activities but clearly was not an outstanding scholar at this point in his career. MacCallum⁵ makes the interesting statement that "he was religious, but he reacted against his father's type of Presbyterianism and took no particular stand." Interest in medical school was first evidenced by his purchase of medical textbooks while a senior at Yale. Young Halsted entered the College of Physicians and Surgeons (later affiliated with Columbia University) in 1874. Medical school consisted largely of a series of lectures, and Halsted was sufficiently successful to be appointed an intern at Bellevue in 1877. Doctor Halsted graduated high in his class from medical school, and upon completion of his internship, successfully competed for appointment as house physician

at the newly opened New York Hospital. During this year as house physician, Doctor Halsted made his first known contribution to medicine, a new design for hospital graphic charts used almost without alteration until the present time in most hospitals. Doctor Halsted went to Europe in the fall of 1878 to continue his medical education in the most highly recommended clinics of Europe. During this trip, he became particularly interested in German surgery and formed friendships with the leaders of German surgery which continued throughout his professional career.

Doctor Halsted returned to New York in September of 1880 and plunged into a variety of professional activities, including staff appointments with major responsibilities at several New York hospitals, a successful teaching "quiz," and a productive research program.^{7,9} During this period Halsted established a reputation as a brilliant, energetic young surgeon, a rapid operator, and an innovative investigator. The observation has been made that the interests which occupied Doctor Halsted's long professional career all appeared to stem from the period between 1880 and 1886.³

The end of the New York period of Halsted's career was brought about by his involvement with cocaine. The story has often been told but only recently in complete form. At this point, it is sufficient to say that following Koller's description of the anesthetic properties of cocaine when applied to the cornea and conjunctiva, Halsted and a group of associates began to experiment with cocaine and developed methods of regional block anesthesia. This remained one of Doctor Halsted's most significant contributions to medicine. In the course of these experiments, Halsted and several others became addicted to cocaine and Halsted's health and effectiveness so deteriorated that he made an unsuccessful trip to the Windward Islands in early 1886 in an attempt to discontinue use of the drug. On his return, he entered the Butler Sanitarium in Providence, Rhode Island, for treatment of drug addiction. In December of 1886, Doctor Halsted accepted an invitation by his long time New York friend, William H. Welch, to enter Doctor Welch's laboratory at the newly opened Johns Hopkins Medical Institution.⁴

Mr. Johns Hopkins, a wealthy Baltimore merchant, left a sum of approximately \$8,000,000 to establish a hospital and a university with a medical school. The planning of these institutions began before Mr. Hopkins' death and involved the highest caliber of leadership which could be obtained. The excellence of the institutions was by design, and the early faculty appointments, both to the university and its medical school, were fortuitous to say the least. The university opened in 1876, but the faculty for the school of medicine was acquired more slowly. The hospital was opened in 1889 but, because of a financial crisis, the medical school was not in operation until 1893. The period between the acquisition of the medical school faculty and the opening of the medical school was one of intense activity, and the caliber of bright young men who gathered around the initial medical school appointments, most notably William H. Welch, was indeed impressive. Among this group were Councilman, Nuttall, Herter, Brewer, Sternberg, Reed, and Mall. This was the group Halsted came to Baltimore to join, and it is generally considered that the stimulation and friendship of these men, particularly Franklin P. Mall, were important factors in Doctor Halsted's return to a productive professional existence.

The Johns Hopkins Hospital opened in 1889. Prior to that date, William Osler, Professor of Medicine, and Howard Kelly, Professor of Obstetrics and Gynecology, were on the scene in addition to Doctor Welch and Doctor Halsted, completing the "Big Four"

Since his graduation from the Northwestern University School of Medicine in 1950, G. Rainey Williams, M.D., has been certified by the American Board of Surgery and the Board of Thoracic Surgery. He is presently Professor of Surgery at the University of Oklahoma School of Medicine. He is a member of the American Surgical Association, the Southern Surgical Association, the Society of University Surgeons, the Halsted Society, the Society for Vascular Surgery, the American Association for Thoracic Surgery and the American College of Surgeons.

who made such an impact on American medicine and medical education. An additional appointment of importance was that of Miss Caroline Hampton as nurse in charge of the operating rooms. Miss Hampton was a member of the distinguished South Carolina family. Her father was Frank Hampton, brother of Wade Hampton, III, whose record during the Civil War is well known, but whose contributions to South Carolina in the postwar period are even more significant. Caroline Hampton's mother was Sally Baxter, daughter of a wealthy New York family and probably the inspiration for Beatrix in the novel, *Henry Esmond*, by William M. Thackeray, who became infatuated with Miss Baxter during a trip to the United States.⁶ Caroline Hampton spent the first several years of her life on the Hampton plantation. Her mother died in September of 1862 and Frank Hampton was killed at the Battle of Brandy Station in June of 1863. Caroline Hampton's later childhood was spent with sisters of her father in the vastly reduced circumstances of the postwar southern aristocracy. She was independent enough to go to New York for nursing training and, on graduation from nursing school at the New York Hospital, came to Baltimore to begin work in the new Johns Hopkins Hospital. Her sensitivity to the bichloride of mercury solutions then being used for scrubbing the hands and arms of the operating team, and the subsequent invention of rubber gloves by Doctor Halsted to prevent this is one of the well known Halsted legends. Doctor Halsted and Miss Hampton were married in 1890, and in 1892, Doctor Halsted was appointed Surgeon-in-Chief of the hospital, this appointment being delayed because of his history of drug addiction from which he had apparently recovered completely.

Halsted's professional activities can perhaps be considered as involving three closely interrelated spheres: the research laboratory, the clinical arena, and the surgical training program. Beginning in New York and continuing throughout his life in Baltimore, Doctor Halsted was close to the experimental laboratory, and a continuous series of animal experiments was carried out by him or under his close direction. Experi-

ments on intestinal suture, peritonitis, thyroid surgery, parathyroid ablation and vascular ligation led to contributions of lasting importance. Doctor Halsted continuously emphasized that surgical procedures should not be applied to humans until they were tested, insofar as possible, in the animal laboratory. His careful experiments, his complete objectivity, his dedication to the experimental approach and his transmittal of these interests to the younger men who gathered about him are an important part of Halsted's contribution to surgery. Doctor Halsted demonstrated intense and lasting interest in certain clinical problems, leaving operations for conditions outside these areas to his capable associates. The operations he developed for carcinoma of the breast, inguinal hernia, and for thyroid disease are the basis of the management of these surgical problems today. Doctor Halsted's approach to clinical problems was very similar to his approach in the laboratory. It included careful assessment of the problem, a meticulous approach to the operation, and extremely perceptive and detailed analysis of results obtained.

Despite the brilliance and lasting importance of his laboratory and clinical endeavors, it is probable that Halsted's fame rests principally on his development of a system for educating surgeons. This was not unlike the German system, which Halsted so much admired, and was obviously patterned to a considerable extent after the medical residency established by Osler. The plan simply was to select the best men available and subject them to graded clinical responsibility, culminating in a position as resident with independent operative responsibility. The value of such an educational system is so well accepted at present that it is difficult to imagine the degree of improvement over the totally fragmentary procedure of becoming a surgeon prior to the opening of Hopkins Hospital.

Halsted quickly attracted a group of bright and industrious men who subsequently became leaders in American surgery. The accomplishments of the Halsted residents have been carefully detailed by Carter² but it might suffice just to mention the names of a few including Bloodgood, Heuer, Follis, Reid, Holman, and Cushing. The surgical

staff above the resident level was never large and, with one exception, consisted of men who had completed the training program in surgery. The exception, however, is a notable one, being J. M. T. Finney, who came to Baltimore from the Massachusetts General Hospital. Doctor Finney's talents complemented Doctor Halsted's and his eminence as a surgeon and as a man did much to enhance the fame of the department at the new medical institution. Through his residents and staff Doctor Halsted became known as a great teacher, which, in effect, he was. In New York he was a brilliant classroom teacher, a rapid dexterous operator, whereas in Baltimore he was a very retiring, mild classroom teacher whose performance at an undergraduate level was frankly often considered dull. In addition, he was a slow, meticulous operator, taking much longer than his associates to do most procedures. He was, in the Baltimore years then, a teacher by example and precept. Not least among Doctor Halsted's important activities was his guidance of men into surgical specialty areas. He encouraged Doctor Sam Crowe to develop otolaryngology, Doctor Harvey Cushing to concentrate on neurosurgery, Doctor Howard Baetjer to explore radiology, and Doctor Hugh Young to become interested in urology. All became "founders" of surgical disciplines.

It is difficult to gain an image of Halsted as a person. He was reserved, during his Baltimore years at least, though capable of being a witty conversationalist and a charming host. He and Mrs. Halsted lived quietly in a magnificently furnished townhouse in Baltimore but, after the first few years of their marriage, rarely entertained. Doctor Halsted was quite knowledgeable about antique furniture and rugs, and collected valuable pieces with which the house was furnished.

Many of Doctor Halsted's eccentricities have been described. He was extremely meticulous in dress. His clothes were made by a particular tailor in London and his shoes were made in France from leather which he selected and marked. His linen was sent to France to be laundered, and he expressed surprise at learning that there was a decent laundry in Baltimore. He would burn only one kind of firewood which was carefully

selected and transported to Baltimore. Among Doctor Halsted's many interests was his lasting affection for the country home in Cashiers, North Carolina, purchased by him from the Hampton family and named High Hampton. This beautiful site has been maintained and is currently a charming and well-run inn. Mrs. Halsted went to spend several months there each year, and Doctor Halsted joined her during the summer and took great delight in raising prize dahlias. Doctor Halsted was frequently absent from the hospital for long and unexplained periods of time. Doctor Alfred Blalock,¹ a worthy successor to Halsted, uncovered some correspondence from the board of trustees of the hospital expressing concern about these absences, which (to Doctor Blalock's delight) Doctor Halsted managed effectively by simply failing to respond in any way.

The question of Doctor Halsted's recovery from cocaine addiction was raised from time to time. Other than an occasional opinion to the contrary, the evidence available suggested that he was free of the drug habit following his second trip to the Butler Institute in 1886 or 1887. In the extensive library left by Osler, there was a small, locked black book which Osler requested not be opened until the 100th anniversary of the Johns Hopkins Hospital (which would be 1989). Doctor William Francis, Osler's cousin and literary executor, read the book in 1958 and decided that it should be published but died before this was accomplished. The sections of this book having to do with Doctor Halsted were published by Penfield in 1969.⁸ In handwritten notes by Osler, it is made clear that Doctor Halsted continued to take morphine and it is probable that his addiction continued throughout his life, although Osler suggested the possibility that he might not have taken morphine after 1912. The part addiction played in Halsted's professional career will certainly be debated for decades, but the fact that a professional career of such high quality was possible certainly adds to one's estimate of the man's strength of character.

Doctor Halsted died of complications of biliary tract disease on September 7, 1922. His legacy of scientific, experimental approach to surgical problems, of objectivity in the management of surgical patients, and

of care in the selection and training of surgeons and surgical teachers has continued to grow in importance and establishes him in a position of prominence among the surgical figures of all time. Doctor Welch spoke for many when he wrote in a letter to Mrs. Halsted, dated October 13, 1922, "I hope you know how completely I reciprocated Doctor Halsted's feelings of affection. I admired him above all my colleagues. There is no one who can fill his place as he did. The memory of his wonderful character and life and

devotion must be your most precious possession." □

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Medicine in Southwestern Oklahoma Before Statehood

EVERETT R. RHOADES, M.D.
DORIS BULLOCK

The founding of Fort Sill, Indian Territory and the medical officers assigned there played an important part in the history of medicine in Oklahoma.

Because there is so little information readily available to those interested in the history of medicine in the western part of Oklahoma, this account is presented in an attempt to record some of the conditions occurring in that area before statehood. Although there were a few physicians in the area before the establishment of Fort Sill, this event was so significant to the history of southwestern Oklahoma that an account of medical practices at the time of its formation should provide valuable information regarding health conditions in Oklahoma before statehood.

MILITARY MEDICINE IN THE U.S. AFTER THE CIVIL WAR

Military medicine following the Civil War suffered the neglect and stagnation that seems always to accompany a "peace time" army. A year after the end of that conflict, there were no army general hospitals.¹ In

July 1866, Congress fixed the strength of the Medical Department at one Surgeon General/Assistant Surgeon General (rank of Colonel), one Chief and four Assistant Medical Purveyors (Lt. Col.), 60 Surgeons (Major), and 150 Assistant Surgeons (Lt. or Capt.).² However, the existing army soon was widely dispersed throughout the west so that a number of contract surgeons were required (282 in 1868). In 1869, there were 32,896 officers and men in 239 posts. The soldiers were frequently active against Indians and were accompanied on expeditions by the physicians. Often there was only one physician at a post. The exploits and bravery of these physicians has gone largely unnoticed. Several anecdotes relating to frontier army physicians are gathered together by Dunlop.³ This author gives considerable attention to G. M. Sternberg* who was to become Surgeon General of the United States Army, but who had an exciting and dangerous existence while fighting Chief Joseph and the Nez Percés. Another colorful medical officer was Valentine McGillicuddy, for whom Calamity Jane served as nurse and who attended Chief Crazy Horse at the latter's death. The military physicians were occasionally wounded as well.** Other im-

*George Miller Sternberg (1838-1915) was graduated from the College of Physicians and Surgeons of N.Y.C., became a surgeon in the Civil War and remained in the Medical Corps after that time. He discovered the pneumococcus (in his own sputum) in 1880 and in 1885 demonstrated the plasmodia of malaria (for the first time in the U.S.). He was a founder of the Army Medical School and often considered the father of American bacteriology. Apparently he never served at Fort Sill.⁴

**Bernard John Dowling Irwin, an army surgeon, was the first soldier to win the Congressional Medal of Honor, because of his exploits during a campaign against Cochise.⁴

portant contributions of medical officers included the establishment of the Army Signal Corps by Surgeon Albert J. Myer who got the idea from observing Indians signal fires.⁵ This unusual man was also responsible for setting up the U.S. Weather Bureau. Dunlop⁶ states that the first weather prediction was made by an army surgeon who telegraphed information about a storm threatening Texas farmers in 1871.

THE ESTABLISHMENT OF FORT SILL

Custer's predawn winter charge down the three buttes north of the Washita through Black Kettle's village in 1868 stopped finally at the eastern end of the Wichita Mountains after a short rendezvous with Gen. Phil Sheridan and a decidedly unfriendly group of Kiowas at Fort Cobb, I.T.^{7,8} The winter of 1868-69 was severe and because of coldness, persistent rain and mud in the dugouts along the Washita bottoms, Sheridan ordered the transfer of Fort Cobb to Camp Wichita.* Sheridan left Camp Wichita for Fort Hays, Kansas on his way to Chicago, on February 23rd, 1869 with instructions to Brig. Gen. Benjamin H. Grierson to build a permanent post on the site. On March 2nd, Custer marched west along the south side of the Wichitas then up to the headwaters of Red River in search of more Cheyenne and Arapaho whose blood he had recently spilled.⁷ His expedition into the northwest figuratively culminated seven years later at the Little Bighorn where the Cheyenne and Sioux were able to avenge the death of Black Kettle.

This lonely and inhospitable camp, already visited by the top brass of the army, was destined to become one of the important military establishments, serving as an artillery and later a guided missile school for the United States Army. Military personnel from around the world were to study artillery here for many years. Camp Wichita was designated a permanent post August 1st, 1869 and given the name, Fort Sill.^{7,8}

*So designated because it was the site of an ancient Wichita village. Camp Wichita, shortly named Fort Sill, was originally located by Gen. Grierson as an ideal site for an army post. It was on a natural elevation on the south bank of Medicine Bluff Creek, just north of the present city of Lawton, Oklahoma.

The report of Kilbourne⁹ is so graphic and concise that his description cannot be improved. The following is from Kilbourne dated September 24th, 1870:

Fort Sill is situated on the Comanche, Kiowa and Apache reservation, Indian Territory; latitude 34°40' north, longitude 98°25' west; elevation above the sea, 1,700 feet. The post is near the confluence of Medicine Bluff and Cache Creeks, on the south bank of the former. Fort Smith, Arkansas, is 275 miles east; Fort Richardson, Texas 110 miles south; Camp Supply, 190 miles northwest; and Fort Arbuckle, 75 miles east. The post is situated at the eastern extremity of the Wichita Mountains. Mount Scott, the highest peak and eastern spur of the range, is 9½ miles in a right line from the post. Several hills belonging to the range intervene, among which are the noted Medicine Bluffs, one mile west by north. Washita River is 30 miles north; Red River, 45 miles south. Fort Sill was located by General Grierson in June, 1868, under the name of "Camp Wichita," and was first occupied by four companies of the Tenth United States Cavalry in January, 1869. It was selected by Major General Sheridan as a base of operations against the Cheyennes and Kiowas, in his winter campaign of 1868-69, and from that date has been the military center of the reservation of Comanches, Kiowas and affiliated bands of the Wichitas, Keechies, Wacoos, and Caddoes. The military reservation upon which the post is situated is six miles long (east and west) by three miles broad (north and south), and is a quadrangle. Within its boundaries are included the confluence of Cache and Medicine Bluff Creeks, and the timber and bottom lands which fringe and skirt those streams, the hills called Medicine Bluffs, the Indian commissary buildings, lime-kilns, quarries, etc.

The Wichita range of mountains extends from the northwest corner of the military reservation westward for about 50 miles. The width of the chain is from 5 to 15 miles. The highest peak is Mount Scott, at the northeast extremity of the range; it has an elevation of 1,135 feet above the waters of Medicine Bluff Creek. Mount Webster, at or near the western extremity, has nearly the same elevation.

Both Cache and Medicine Bluff Creeks furnish a plentiful supply of water for all purposes the year round. There are several springs of good water on the military reserve, and one on the post reserve. The latter is the largest, and is situated on the north bank of Bluff Creek opposite the post; this spring is of sufficient size to furnish water to the post for drinking and culinary purposes. It is proposed to raise the water to a reservoir with an engine for supplying the new post. No wells have been sunk. Several mineral springs have been found on the military reserve.

A meteorological register has been kept at this post since April 1st, 1870, the necessary books, in-

struments and apparatus not being in order until that date. The monthly mean temperature is as follows: April, 62.85°; May, 75.73°; June, 73.97°; July, 81.81°; August, 79.23°. The monthly extremes are as follows: April, highest, 88°, lowest, 40°. May, highest, 94°, lowest, 64°; June, highest, 101°, lowest, 64°; July, highest, 105°, lowest, 64°; August, highest, 106°, lowest, 62°. The amount of rainfall in April was 3½ inches, no rain in May; in June, 4.60 inches; in July, 4.55 inches; in August 3.03 inches; total 15.90 inches. The average annual rainfall is large.

Fort Sill is situated in the center of the post reservation. The latter is an area of one square mile situated in the center of the United States military reserve. The ground occupied by the buildings is a plateau of irregular outline, containing the area of about one-half mile square. The sides of this plateau slope in all directions. Its elevation above low water mark is about 50 feet. All buildings excepting the commissary store-house are to be built of the gray limestone previously described. This stone is easily quarried and worked and when laid into walls presents a bright and fine appearance. The general plan of the post is a square. Its capacity, when complete, will be six companies of cavalry. The lots for each barrack are 200 feet square; those for the officers are each 200 by 106 feet. The number of buildings intended for use as barracks is three. These buildings, of which the walls are now completed, are constructed of gray limestone, unfaced. The inner surface of the walls will not be plastered. Each building is double, and of one story, each division having capacity for the accommodation of a company of one hundred men. The buildings are to be warmed by stoves; they are well lighted by windows on all sides, and ventilated from the ridge. The walls are one and a half feet thick; the external dimensions are 200 by 30 by 12 feet. Two wings, each 60 by 30 by 9 feet, with porches, ten feet deep, in front and rear. The air space per man is about 388.57 cubic feet, calculated on the basis of one hundred men to each barrack. In the one building now occupied bunks are in two tiers, each for the accommodation of four persons. **There are no wash or bathrooms in the plan.** The wing of each set of company quarters contains a mess room, 27 by 10 feet, a kitchen, 17 by 17 feet, and a store room 15 by 17 feet. Laundresses and married soldiers are quartered in tents.

The hospital will be located in the northwest corner of the post; it will be constructed of the same material as the other buildings; its capacity will be twenty-four beds. The plan is the one furnished from the Surgeon General's office for a building of that size.

The water used for washing and bathing and for general purposes is obtained from Medicine Bluff Creek, a few yards above the post. Except at high water the quality of this water is good, and suitable for all purposes; the impurities, during a high stage of water are mostly clay, sand, and some organic debris washed down by the stream. Much of the drinking water is obtained from the large spring opposite the post, previously mentioned and

from two smaller ones, one just above and one just below the present post, and from a private well on the premises of the post trader. The water of the creek is supplied by means of water wagons (tank on four wheels drawn by eight mules) in liberal quantity. The water thus furnished is kept in covered barrels. There are no cisterns or reservoirs at the post.

The efficiency of the natural drainage, both in the new post and of the ground now occupied, is nearly complete. There is a spot of low ground of about 50 yards square in area, lying between the two posts, which is not drained; a small amount of labor is only needed to drain it toward the creek.

Vegetables, except canned articles have not generally been supplied by the commissary. It is proposed hereafter to keep a supply on hand. There is no market capable of supplying the post with vegetables, butter, etc., within 50 miles.

Medical supplies are obtained from the medical purveyor at St. Louis, Missouri.

The nearest railroad station is at Fort Harker, Kansas, distance 334 miles, the means of communication with that post are trains, public and private. Communication is somewhat irregular being liable to interruption by high water in the Washita, Canadian, and Arkansas Rivers—rarely from the attacks of Indians. Mails are usually regularly received twice weekly. Occasional interruptions occur from high water. The line is one of light wagons from Boggy Depot, Indian Territory to Fort Sill; at the former place connection is made with the main line from Fort Smith, Arkansas to Fort Concho and El Paso. The time required to communicate with department headquarters is about ten days.

There are no inhabitants on the Indian or military reservations excepting those authorized by law; these include contractor's men, drovers and persons adopted into the Indian tribes; also, employees of the Indian agent.

The prevailing diseases during the past year, ending June 30th, 1870, have been intermittent fever, acute diarrhea, acute dysentery, and acute catarrh. The malarial influence is predominant at all seasons, and the majority of cases of acute disorders are complicated with it. The water used at the post is not an appreciable cause of disease. The origin of malaria is regarded as being both climatic and endemic. At Fort Arbuckle, in the same latitude, 75 miles east, malarial diseases are much less frequent than at this post. The amount of low moist ground in the vicinity of the post, the nature of the subsoil, and rapid alternations of heat and moisture are regarded as the endemic causes. An epidemic catarrh of mild form has prevailed once during the past year. The graver forms of pulmonary diseases are not common. Bowel affections and rheumatism of the muscular variety are common. Acute rheumatism is rare. Two cases of congestive fever have occurred at the fort, with one death. Malaria has been the bane of the post; probably one-half of the entire garrison have been attacked with some form of malarial disorders.

Work on the new post of Fort Sill was commenced in the summer of 1869 and during that year

one building, the commissary warehouse, was completed. This building is constructed of hewn timber, laid one piece upon another, horizontally. All other buildings are of stone. The number of buildings now completed and occupied is nine, as follows: Quartermaster store-houses, two; commissary store-house, ordnance building, headquarter offices (partly occupied by the library), one barrack building, quartermaster corral, and two small dwellings adjacent. The walls of the following named buildings are now nearly completed: two barracks, six sets of officers' quarters. The former lack only the partition walls, as do the latter.

Foundations for the following named buildings have been excavated, viz: Five sets of officers' quarters and guard house. The following have not been commenced: hospital, bakery and chapel post. The men are quartered in tents and the officers in log houses.

PRINCIPAL DISEASES

The number of sick and principal causes of illness for both white and colored troops for portions of the year 1869 are shown in Table I. Of a mean strength of 194 white troops in 1869* ninety or nearly one-half were sick at some point. Of the 401 colored troops,** 387 were ill at some time. Malarial fever was the outstanding cause of illness followed by diarrhea and dysentery. "Catarrhal affections" which included bronchitis, laryngitis, and pneumonia, also made up an important category. Rheumatism was

*for four months
**for six months

Doris L. Bullock worked at the U.S. Army Hospital in Fort Sill processing disability cases and as Physical Evaluation Board Liaison Officer. She is a member of the Great Plains Historical Association.

Since his graduation from the University of Oklahoma School of Medicine in 1956, Everett R. Rhoades, M.D., has been certified by the American Board of Internal Medicine. He is Associate Professor of Medicine at the school of his graduation. His medical affiliations include the American Federation of Clinical Research, the American Thoracic Society, the Infectious Disease Society of America and the Southwest Oklahoma Historical Society. Doctor Rhoades is President of the Association of American Indian Physicians.

Table I
STATEMENT SHOWING MEAN STRENGTH, NUMBER OF SICK AND PRINCIPAL DISEASES OF WHITE TROOPS AT FORT SILL, INDIAN TERRITORY, FOR THE YEAR 1869 (from Kilbourne)

	Mean Strength	Whole Number Taken Sick	Malarial Fever	Diarrhea and Dysentery	Veneral Diseases	Scurvy	Rheumatism	Catarrhal Affections*	No. of Deaths
1869 (four months)	194.75	90	57	7	2	1	6	15	—

STATEMENT SHOWING MEAN STRENGTH, NUMBER OF SICK AND PRINCIPAL DISEASES OF COLORED TROOPS AT FORT SILL, INDIAN TERRITORY, FOR THE YEAR 1869

	Mean Strength	Whole Number Taken Sick	Typhoid Fever	Malarial Fevers	Diarrhea and Dysentery	Veneral Diseases	Scurvy	Rheumatism	Catarrhal Affections*	No. of Deaths
1869 (six months)	401.83	387	6	256	63	6	1	7	19	9

*Include laryngitis, bronchitis, pneumonia and pleurisy

present in both white and colored troops as were venereal disease and scurvy. There were no deaths among white troops but nine of the colored troops died during the six months reported, a mortality rate from illness of two percent.

The major causes of illness as listed by Kilbourne⁹ are of considerable interest. Of the six categories all but two were clearly infectious in origin and it is extremely likely that the fifth category, rheumatism, was also related to infections in a significant degree. Only the sixth, scurvy, clearly was not infectious in origin, and it accounted for only two episodes of illness.

The statement by Kilbourne that the water was not an appreciable cause of disease during this time surely proved to be naive and, during the succeeding year, in spite of heated controversy, there was considerable discussion as to need for water not contaminated with human and domestic animal waste matter. It undoubtedly was the major cause of dysentery.

MALARIAL FEVER

Kilbourne's concept of malaria is worthy of special note. This he regarded as being both "endemic" and "climatic" in origin.

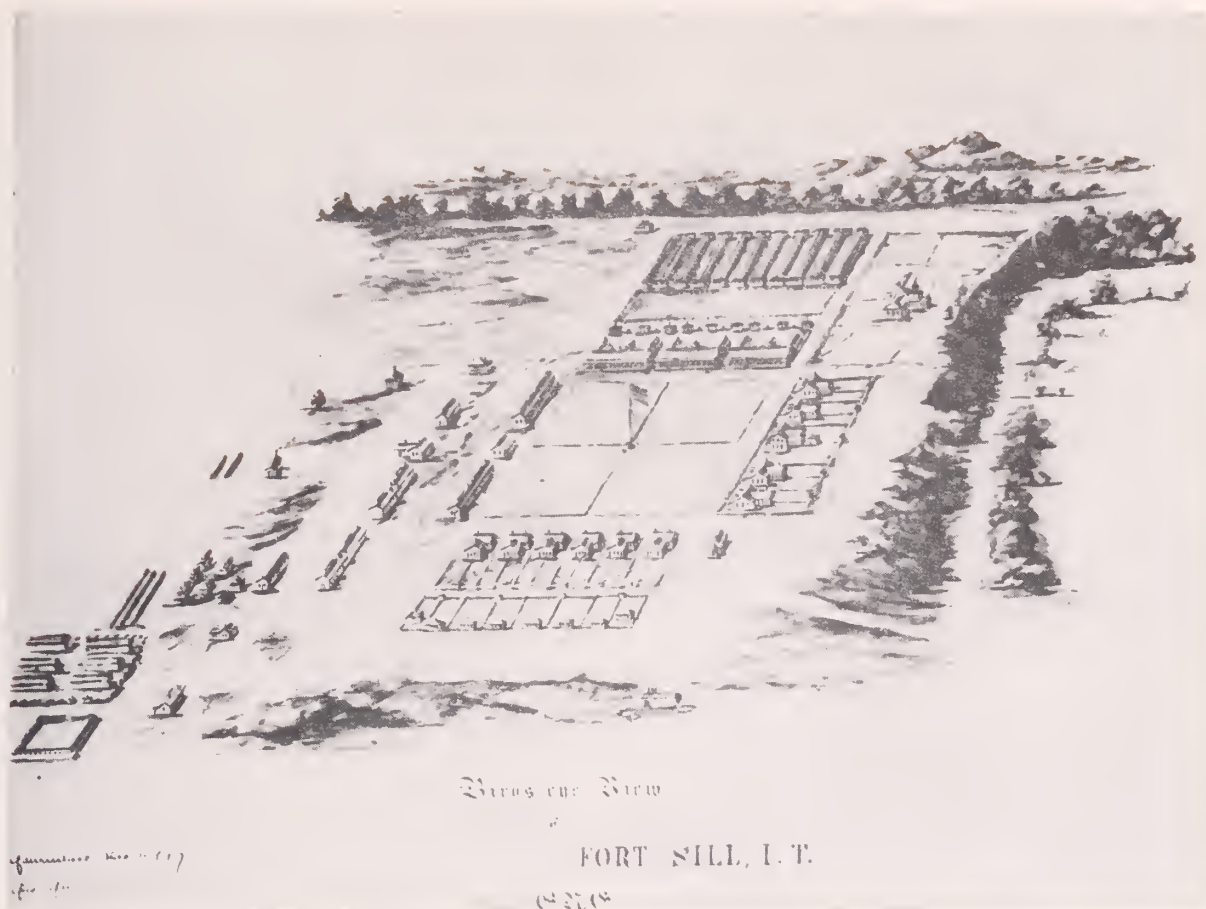


Figure 1. Photograph of a painting of the old Post Fort Sill, looking west.

—Courtesy Fort Sill Museum

Kilbourne⁹ regarded the “endemic” causes to be the low, moist ground in the vicinity of the post, the nature of the subsoil, and the rapid alternations of heat and moisture. He pointed out that Fort Arbuckle, 75 miles east in the same latitude, had a much lower incidence of malarial fever.*

In 1869 malaria was still classified as a fever, usually described as quartan or tertian, and sometimes as aestivo-autumnal, depending upon the yearly prevalence and the nature of the temperature curve itself. Rush¹⁰ had perpetuated the idea of fevers as nosological entities (indeed he thought there was only one fever), rather than a symptom of a variety of maladies. Laveran** was not to observe the malaria parasite for another eleven years. The associa-

tion of malaria with water and mosquitoes was not new in 1869, having been suggested by Lancisi***¹² and later in America by Mitchell. The use of the Peruvian Indian remedy, cinchona bark, introduced into Europe by Jesuits in 1632, and popularized by Sydenham, permitted a differentiation of malaria from other types of “intermittent” fever.¹³ Oliver Wendell Holmes won the Boylston prize with his essay on “Intermittent Fevers in New England”¹⁴ in 1836, prior to his brilliant study of puerperal fever for which he is more well known. The classic work on *miasma* was presented by Henle in 1840 in a monograph entitled “Von den Miasmen und Contagion und von den Miasmatischen-Contagiosen Krankheiten.” This work also is the earliest statement of contagious diseases as caused by living organisms.¹⁵

Thus the surgeons at Fort Sill at the time

*Although nothing was known at this time of the parasite of malaria or of the mosquito, at least one of the observations, that of low lying stagnant water, led to the proper course of action; drainage, with subsequent decrease in malaria.

**It was of interest that Charles Louis Alphonse Laveran¹¹ was a career army physician and at the time of his observation of 1880 was stationed in Algiers. He published more than 100 articles on malaria alone.

***Giovanni Maria Lancisi (1655-1720) described as the greatest Italian physician of his time, stated the doctrine of miasma in “De Noxiis Paludum Effluviis,” in 1717.¹²

it was established had a reasonable concept of "intermittent" and "malarial" fevers as diseases both pandemic and endemic, clearly associated in some way with pools of water, increased rainfall, and flooding of lowlands.

Another important influence upon the physicians at Fort Sill undoubtedly was the great work by Drake, "Diseases of the Interior Valley of America," a monumental treatise which emphasized the effects of topography, geography, diet, habitat and climatology upon the health of the inhabitants. It is likely that the daily weather and climate recordings and other observations such as diet and clothing made by the Fort Sill physicians were, at least in part, stimulated by this book.

DYSENTERY

Just as Sydenham* exerted a strong influence on the thinking of physicians about malarious fevers, so too did he produce an important work on dysentery, stressing its seasonal aspects.¹⁶ During his era, which included the Thirty Years War, typhus, typhoid, dysentery, diphtheria, influenza, smallpox, scarlatina and other contagious diseases ravaged Europe.

Sir John Pringle (interestingly enough called the founder of modern military medicine)¹⁷ delineated different types of dysentery. His influence in the design of hospitals, emphasizing ventilation, is certainly to be found in the plans for the new hospital soon to be built at Fort Sill.¹⁸ A man of unappreciated genius, he named influenza and suggested the concept of neutrality in the handling of battle casualties 100 years before the Geneva Convention of 1864 formalized the idea of The International Red Cross. He left an early classic of military medicine: "Observations on the Diseases of the Army" (London 1752). Of course at the time of Fort Sill's beginning, Shiga had not yet discovered the dysentery bacillus and Eberth had not yet identified the typhoid bacillus.

*Thomas Sydenham (1624-89) is credited with turning the entire direction of internal medicine. He reintroduced the Hippocratic techniques of observation and clinical experience. He scorned the prevalent "scientific" theories of his day although he subscribed to the Hippocratic theory of the concoction of humours. He may well be regarded as one of the founders of epidemiology.

Even though wounds from hostile Indians were uncommon at this time* the special nature of arrow wounds deserves brief mention. A detailed and learned dissertation on arrow wounds is given by Bill,¹⁹ who includes a delightful description of the arrow as a missile, its manufacture, and its proper use. Because of the peculiarity of arrows as mortal weapons and the vividness of Bill's description, a direct quotation is warranted:

Let us suppose a case to illustrate and explain our meaning. An arrow is shot at a man at a distance of fifty yards. It penetrates his abdomen, and without wounding an intestine or a great vessel, lodges in the body of one of the vertebrae. The arrow is grasped by the shaft by some officious friend and after a little tugging is pulled out. We said the arrow is pulled out. This was a mistake: it is the shaft only of the arrow that is pulled out. The angular and jagged head has been left buried in the bone to kill—for it surely will—the victim. The explanation of such mishaps is this: the ribbon or tendon which compressed together the split sides of the end of the arrow, and so clamped the head and the shaft together had become wetted with the fluids effused in the course of the wound. When wetted, it was, of course, lengthened, and, if lengthened, loosened, ceased longer to bind together the split sides of the shaft. Experience has abundantly shown and none know the fact better than the Indians themselves, that any wound of chest or abdomen, in which the arrowhead is detached from the shaft and lodged, is mortal. From this we conclude that the danger peculiar to all arrow wounds is, *that the shaft becoming detached from the head of an implanted arrow, leaves this so deeply imbedded in a bone that it cannot be withdrawn, and that, remaining, it kills.*

Thus, the remaining foreign body, naturally infected, eventually killed by sepsis. Bill points out the extreme force, necessitating the use of the strongest forceps required to remove an arrowhead. He also points out that a properly removed arrow with the head also removed from the wound, becomes an ordinary penetrating wound such as that produced by a stiletto. Another interesting observation is that most arrow wounds involved the upper extremity because the soldier seeing the arrow in its flight, would throw up his arm to ward off the missile.

COMMENT

The early physicians assigned to the new

*Even later, when open warfare existed, a soldier was as apt to be killed by his "friends" or himself as by the Indians.

post soon to be designated Fort Sill represented a variety of backgrounds and in most cases, if not all, were physicians who, for one reason or another, remained in military service at the close of the Civil War. They had to demonstrate considerable initiative, ingenuity and bravery while serving as medical officers. Duties included collecting geographic, climatic and weather observations along with inspections of the clothing, food, shelter and recreation of the men. Certain diseases were endemic and at times even rampant 100 years ago in Oklahoma. These included malaria and dysentery. The daily correspondence and monthly reports indicate an incomplete understanding of the importance of sanitation and public health in promoting health. However, the rudimentary observations were often remarkably close to correct and one who studies the early medical history of Oklahoma experiences a feeling of "pride" in the first physicians who found themselves in Southwestern Oklahoma. ☐

ACKNOWLEDGEMENTS

The authors wish to thank Mr. Gillette

Griswold and the staff of the Fort Sill Museum for help in examining old records. R. Palmer Howard, M.D., Chairman of the Department of History of Medicine at the University of Oklahoma Medical Center provided counsel and encouragement.

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News From The Oklahoma State Department of Health

DIAGNOSTIC SPECIFICITY OF WIDAL'S REACTION

Widal's reaction measures agglutinating antibodies to the O and H antigens of salmonella organisms. The serologic diagnosis of typhoid fever has traditionally been made by either a fourfold rise in O antigen titer, or a titer to O antigen greater than 1:50 on a single specimen obtained in the first three weeks of illness. The H antigen titer is of little value as a specific diagnostic test since it is often elevated as a nonspecific response to many kinds of infection.

Reynolds, *et al.*¹ recently reported that the O antigen titer may be as nonspecific as the H antigen titer. A specific case of culture-confirmed *Salmonella typhi-murium* infection in a two-year-old child was presented

where a diagnostic rise in O antigen titer (Widal's reaction) was observed.

The two-year-old white girl was hospitalized with a ten-day history of fever (101 F) cough, malaise, and intermittent diarrhea which was occasionally streaked with blood. Febrile agglutinations revealed an O antigen titer of 1:80 and a negative H antigen titer. A Widal's test five days later revealed an O antigen titer of 1:320; the H antigen titer was negative. A diagnosis of typhoid fever was made when a salmonella organism was grown from the stool. However, repeated sero-typing showed the organism to be not *S. typhi* but *S. typhi-murium*.

Salmonellae are divided into distinct serologic groups on the basis of O (or somatic) antigens. All group D organisms, one of which is *S. typhi*, possess O antigen 9. Fifty-nine group D serotypes share O antigen 12. Infection due to any serotype in this group can produce antibodies that can react with the O antigen used in Widal's reaction. The diagnosis of typhoid fever must therefore be based on bacteriologic cultures.

¹JAMA, Dec. 21, 1970, Vol. 214, No. 12.

COMMUNICABLE DISEASES IN OKLAHOMA FOR OCTOBER, 1971

Disease	Oct. 1971	Oct. 1970	Sept. 1971	Total to Date	
				1971	1970
Amebiasis	4	6	6	51	52
Brucellosis	—	3	1	4	8
Chickenpox	7	36	4	198	2458
Encephalitis, infect.	7	2	5	36	16
Gonorrhea	1140	705	905	6847	5382
Hepatitis, infect. and serum	83	47	89	707	373
Leptospirosis	—	—	—	1	—
Malaria	2	11	3	67	92
Meningococcal infections	—	1	—	5	20
Meningitis, aseptic	9	6	35	115	39
Mumps	1	113	1	193	2295
Rabies in animals	16	2	7	267	84
Rheumatic fever	2	1	2	22	5
Rocky Mt. spotted fever	1	—	1	28	22
Rubella	4	2	1	68	814
Rubella, congenital syn.	—	—	—	—	—
Rubeola	2	110	1	793	580
Salmonellosis	18	21	17	165	140
Shigellosis	8	9	12	71	78
Syphilis	104	126	103	1053	1202
Tetanus	—	—	—	1	—
Tuberculosis, new active	25	31	32	283	273
Tularemia	1	—	2	17	8
Typhoid fever	1	—	—	3	1
Whooping cough	—	1	—	16	39

Rex Kenyon Named To AMPAC Board



REX KENYON, M.D.

A Past-President of the OSMA, Rex Kenyon, M.D., has been appointed as a member of the Board of Directors of the American Medical Political Action Committee, known as AMPAC, for the calendar year 1972. His appointment was announced by Ernest B. Howard, M.D., Executive Vice-President of the AMA.

AMPAC's two-fold purpose is to provide political education to the medical profession and to provide medical profession support to candidates. Just this fall the organiza-

tion completed its first decade to celebrate its ten-year anniversary.

AMPAC's Board of Directors is named by the Board of Trustees of the AMA. While the organization itself is made up of the 50 state medical political action groups, there are ten directors representing such states as Kentucky, California, Alabama, Oregon, Ohio, Texas, Pennsylvania, Iowa, Washington, D.C., and now, Oklahoma. With one exception all of the directors are M.D.s. The exception is Mrs. John M. Chenuault, Decatur, Alabama, the representative of the Woman's Auxiliary to the AMA.

Doctor Kenyon has been very active in Oklahoma's PAC organization, OMPAC. In May of 1966 when he stepped down as President of the OSMA, he was named Chairman of OMPAC, a position he held until early 1970.

For a number of years Doctor Kenyon has been one of the more eloquent promoters of PAC participation by physicians and has made numerous speeches throughout the United States promoting AMPAC and state PAC memberships. In January of 1970 he was named to the AMA's Council on Legislation, one of the most coveted of all AMA Council assignments. □

"Urgent" Request Issued by Medicare

A message marked "urgent" in large red letters was sent by the Medicare Claims Administration to every physician's office in the state and addressed to the attention of the Medicare Clerk. The letter contained information urging the physician's staff to use the "Alpha Identification Code" whenever filing Medicare claims.

A physician's identification number . . . Alpha Identification Code . . . has been issued to every physician in the state to be used on the SSA-1490 (Request for Medicare Payment) form.

The Medicare Claims Administra-

tion has requested that Medicare Clerks working in physician's offices be sure that all claims submitted to Medicare have this necessary identification number on it in the appropriate place. The inclusion of the number will help speed up the Medicare claims payment process and assure a quicker and more accurate payment.

Anyone needing additional information about the physician's identification number should contact Aetna Life and Casualty-Medicare, 7 South Harvey, Oklahoma City, Oklahoma. Telephone Area Code 405, 232-3533. □

Dual Narcotics Registration Required

A new state law, combined with a new federal law, now requires that all Oklahoma physicians must register with two separate agencies in order to prescribe, dispense, or administer any dangerous controlled substance such as narcotics, amphetamines, barbiturates, and certain tranquilizers. One registration is with the federal government, the other with a state agency.

Federal law required that as of May 1st of this year all physicians were to have a Bureau of Narcotics and Dangerous Drugs Registration number in order to legally handle controlled dangerous substances. The new state law requires that all physicians must be registered with the state by January 1st, 1972.

In later October all Oklahoma physicians received an application for registration from the Oklahoma Narcotic and Dangerous Drugs Control Commission. The application was to be filled out and returned to the commission along with a registration fee of \$5.00. When it is returned to the commission office, a state narcotic and dangerous drug control number will be issued to the physician. Unlike the federal number, it is not necessary to use the state number on prescriptions for controlled substances. However, the state certificate must be kept in the physician's office and shown upon lawful request.

Some confusion still exists about the new federal narcotic law. There is a requirement that a physician must have a *separate registration number for each office that he maintains . . . if he administers or dispenses any controlled dangerous substance out of that office.* This is a change from the old law where the narcotics number was given to the physician personally, and not to his place of business.

Tulsa Physicians Honored

A physician may prescribe a controlled dangerous substance using the number assigned to him at his principal practice office. However, if he maintains a stock of controlled dangerous substances in another office and *dispenses or administers* these substances to his patients, then it is necessary for him to have a separate number for that office.

It is not necessary for him to have more than one state registration number, and it is not necessary for a physician to have a separate BNDD number for a hospital . . . since the hospital is required to have its own number.

Physicians needing additional BNDD numbers should contact the Bureau of Narcotics and Dangerous Drugs, 1114 Commerce Street, Room 723, Dallas, Texas 75202 and request registration information. □

Tulsa Medical School Approved by Board

A resolution endorsing "the concept of establishing a new medical school in Tulsa, either as an independent institution or as a satellite of a major state university" was adopted by the OSMa Board of Trustees during its meeting on November 14th. A copy of the resolution will be sent to all Oklahoma legislators.

In a news release announcing the Board's resolution OSMa President Lucien Pascucci, M.D., said, "The Board realizes that there is an extended lag-time between the conception of a medical school and the graduation of its first doctor. This can take as long as ten years, so Oklahoma needs to plan now for its second medical school."

The resolution praised the University of Oklahoma Medical School for its response to the public need by increasing its enrollment but went on to point out, "even though the supply of medical doctors has been increasing at a greater rate than the general population, growing public demand for personal health services is placing a severe strain on available medical person-



nel . . . and the Oklahoma State Medical Association recognizes that the production of medical doctors must be increased to keep pace with the public expectations . . ." The resolution was an outgrowth of a dual feasibility study for a new medical school in Tulsa. The 33rd Oklahoma Legislature authorized research into the possibility of establishing either a second medical school or a school of osteopathy. □

Four veteran Tulsa County physicians are presented certificates of Life Membership in the Oklahoma State Medical Association by Lucien M. Pascucci, M.D., President (center). From left to right are Joseph Fulcher, M.D., Charles H. Eads, M.D., William A. Dean, M.D., and J. K. Lee, M.D. The presentation was made at the November 8th meeting of the Tulsa County Medical Society at St. John's Hospital of Tulsa.

Doctor Fulcher, a graduate of the University of Tennessee School of Medicine, entered practice in Tulsa in 1928, specializing in Urology. He retired last year. Doctor Eads, an obstetrician and gynecologist, retired from active practice earlier this year. A graduate of the University of Oklahoma School of Medicine, Class of 1933, he entered practice in Tulsa two years later.

Doctor Dean, also an obstetrician and gynecologist, is still in active practice. He graduated from Emory University in 1917, and entered practice in Tulsa at the close of World War I. Doctor Lee is also in active practice, specializing in Internal Medicine. A graduate of the University of Oklahoma School of Medicine, he has practiced in Tulsa since 1925. □

Purpose of the all day program will be to explain the legislative process, the interworkings of the three branches of government and how to influence the making of laws.

Governor David Hall will be the opening speaker when the program begins at 10:00 a.m.

The meeting will be conducted in the Blue Room located on the second floor of the State Capitol Building. A reception will be held from 9:00 until 10:00 a.m. and legislators will be invited for coffee and donuts. This will give the ladies an opportunity to visit with their elected representatives.

Other speakers on the program will include Marian Opala, Administrator of the Oklahoma Court System. The workings of the two law making bodies will be covered by Senators Finis Smith and Denzil

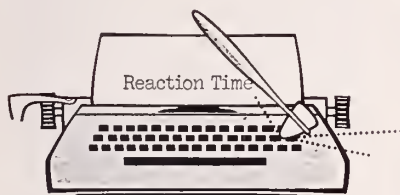
Doctors' Wives To Attend Legislature

The Ladies Auxiliary of the OSMa has announced plans for a "Forum on Medicine and Government" for January 26th. The morning portion of the program will feature talks by leaders in the Executive, Legislative and Judicial branches of Oklahoma's government.

Garrison, and Representatives Rex Privett and Charles Ford.

The afternoon half of the program will consist of a visit to the House of Representatives and the State Senate while the two Legislative bodies are in session.

The ladies of the Oklahoma County Medical Society Auxiliary will host the meeting. ☐



September 27th, 1971

Lucien M. Pascucci, M.D.
President, Oklahoma State
Medical Association
1923 S. Utica
Tulsa, Oklahoma

Dear Doctor Pascucci:

I write to tell you how pleased I am to read your President's Page in the September *Journal*. I compliment you on your presentation and I am particularly pleased with your position on this controversial subject.

I was saddened to see the position of the writer of the July editorial on abortion. It is doubly sad to realize that his evaluation of human life is being taught to the on-coming generation of physicians. That any physician could sacrifice a human life in order to relieve a temporary social condition in the mother seems incomprehensible to me.

I am gratified that the President of the Association is against this practice, and that you spoke out through the pages of the journal.

Very truly yours,
RAY V. McINTYRE, M.D.

RVM:lh

cc: Dr. Mark Johnson
Editor, Journal of OSMA

Alumni Association Chooses Engles



Robert E. Engles, M.D., Durant, right, takes over presidency of the Alumni Association of the University of Oklahoma School of Medicine from Elmer Ridgeway, M.D., Oklahoma City, after election at the annual meeting October 10th in Oklahoma City. ☐

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Book Reviews

A SYMPOSIUM ON THE FUNCTIONAL PHYSIOPATHOLOGY OF THE FETUS AND NEONATE. Clinical Correlations. Harold Abramson, M.D., editor, Professor Emeritus of Pediatrics, Department of Pediatrics, New York Medical College, New York, New York. First edition. Cloth, 182 pp. St. Louis: The C. V. Mosby Company, 1971. \$15.00.

We are told early in the book that the original symposium was organized in order to increase knowledge concerning physiopathology of the fetal-placental-maternal unit. Unfortunately a great deal of the book is devoted to rhetoric and speculation. The chapters on early pregnancies suppress the critical approach that is so necessary to distinguish relative validity of concepts. It reads rather like an abridged catalogue. To their credit, the au-
(Continued on Page 509)



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thors are honest in recognizing that little research has been done in this area. The strengths of the book lie in the sections on intra-uterine diagnosis of fetal disease, the endocrine changes during pregnancy, and the documentation of the pathology of the abortus. Some chapters, for example the one on Genetic Disorders of the Fetus and Neonate, are masterpieces of brevity and information, others give unnecessarily little information and are excessively wordy. A major deficiency is that there is a considerable literature comparing the various means of estimating gestational age and only a single point of view is covered.

The various authors are at their best when they catalogue and at their worst when they ignore differing views. Part of the symposium could serve as an excellent compilation of current information if caution is exercised not to overinterpret certain pet research attempts.—*Robert V. Kotas, M.D.*

INSTRUCTIONAL COURSE LECTURES: THE HAND. By Lee Milford. 282 pp. St. Louis: The C. V. Mosby Company, 1971. \$19.50.

"To cover in detail every aspect of hand surgery would be impossible here; only those problems likely to be encountered by the orthopedic surgeon are presented." Thus, the author sets his goals, and proceeds to fulfill them in an excellent compact book which is both comprehensive and concise. Easily recognizable as the chapter on Hand Surgery from Campbell's Operative Orthopedics, the most recent edition has been brought up to date with the most recent techniques, and has many new pictures and illustrations.

The basic format has remained unchanged. Basic technique of placement of incision, tissue handling, and post surgical care are covered clearly and concisely. Specific operative technique for virtually every acute and chronic condition of the hand is given along with reference to original articles. Even very specialized techniques such as island pedicle

transfer, ray transposition, Krukenberg operation, and thumb pollicization are covered.

The section on treatment of the paralytic hand remains one of the most outstanding sections. The addition of a section on treatment of the cerebral palsied hand complements the section on treatment of the rheumatoid hand. The description on treatment of congenital anomalies probably will be used more for information than specific operative technique.

This book should be essential reading for all orthopedic surgeons and other physicians who undertake to treat surgical conditions of the hand.—*J. Patrick Evans, M.D.*

SENSORINEURAL HEARING LOSS.

Edited by G. E. W. Wolstenholme, and Julie Knight. First edition. 348 pp. with 116 illustrations. London: J. & A. Churchill, 104 Gloucester Place, London, 1970.

This book presents proceedings of a symposium on sensorineural deafness and attempts to bring basic and clinical investigators together for exchange of information and ideas on how to attack the problem of sensorineural deafness.

For the clinical practitioner, investigation of profound deafness in childhood, discussion of occupational hearing loss, and the article on causation and prevention of sensorineural hearing loss after ear surgery provides some information which may be helpful in this practice.

Most of the articles in the symposium are reports of the progress made and definition of the pathology of deafness, and the trials of producing experimental models for the study of deafness. Topics such as pitch perception, discussion of the volley-pitch theory, studies of the stapedius reflex for detection of acoustic tumors and its use as an objective method of determining recruitment in test animals are discussed. In each section the discussion is often the most stimulating portion as other investigators may

have ideas applying the basic investigation presented to other problems.

This book presents an up to date look at where we are in basic and clinical investigations of sensorineural deafness, methods of diagnosis, methods of prevention, and suggestions as to where investigations may proceed from here.

I would not specifically recommend this volume for the library of general otorhinolaryngologists, but rather for investigators in all fields of audiology research, with particular note being given to the discussions and excellent bibliographies presented at the end of each paper.—*Dale Lowry, M.D.*

HANDBOOK OF PEDIATRICS. By

H. R. Silver, M.D.; C. H. Kempe, M.D.; and H. B. Bruyn, M.D. Ninth edition. Paperback, 713 pp. Los Altos, California: Lang Medical Publications, 1971. \$6.50.

The book is a concise review of the clinical aspects of pediatrics. Its emphasis is on the practical aspects of patient management, with little reference to underlying physiologic principles. Thus, the greatest usefulness of the book would be as a review text; it could not serve as a primary text for either student or practitioner.

The book has certain weaknesses. Organization is somewhat poor so that a given topic may be difficult to locate. For example, immunological deficiency states are discussed as a part of a chapter otherwise totally devoted to hematology. The emotional adjustment of the hospitalized child and shock are discussed in the same chapter. Sudden unexpected death is presented in the chapter on allergic disorders.

Some questionable recommendations are made. Steroids are said to be useful in the treatment of thymic enlargement. BCG prophylaxis is recommended, without mention of chemical prophylaxis. Instruction of the parents of diarrheal infants in the preparation of salt solutions is

(Continued on Page 511)

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advised, with no mention of the possible hazards of hypernatremia with incorrect mixtures.

The text is not of uniform quality throughout. In the chapter on the heart, a variety of types of congenital heart disease are presented, with little sense of proportion. One might think, for example, that anomalous origin of the coronary arteries occurred with the same frequency as pulmonary stenosis. The need for prophylaxis against bacterial conditions is mentioned only for ventricular septal defects. Only one page is devoted to congestive heart failure. The presentation of the Jones Criterion (in another chapter) fails to include the requirement for evidence of a preceding streptococcal infection.

Coverage of neonatology is spotty. There is no presentation of the criteria for estimating gestational age. There is inadequate coverage of the use of mechanical respirators, with no mention of positive-end-respiratory pressure. Only a single sentence is devoted to phototherapy for hyperbilirubinemia.

There are several useful features in the appendix. These include drug dosages, normal laboratory values (an unusually complete tabulation) and a list of differential diagnoses for certain common symptoms. Chapters on pediatric procedures and on poisons are included and are handled well.

Certain sections, such as the description of the routine history and physical exam, seem geared particularly to students and include many practical tips (such as how to keep a child from crying).

Material is kept current in most cases. The newer antibiotics, including cephaloglycin, clindamycin, and rifamycin are discussed.

The authors' stated goal was to present "a concise and readily available digest of the material necessary for the diagnosis and management of pediatric disorders." With the limitations inherent in any digest, their objective is reasonably well fulfilled.—*Marvin Krober, M.D.*

CURRENT PEDIATRIC THERAPY

IV. Edited by Sidney S. Gellis,

M.D. and B. M. Kagan, M.D. 1,077 pp. Philadelphia: W. B. Saunders Company. \$27.00.

This is the fifth edition of this biennial text; the last edition appeared in 1968. This edition lists an additional 127 contributors who are for the most part well chosen for their experience in certain specialized areas. As in other books of this type, with a large number of authors, there is overlapping and more than one article may appear on one topic. In certain cases, it offers the reader alternate points of view in the management of various pediatric illnesses. Although it is designed as a manual of therapy, there are large amounts of data on symptomatology and diagnosis, which in certain respects results in an incomplete textbook of pediatrics. It weighs 4.75 pounds.

The advantages of this book lie chiefly in providing information on the therapy of common illnesses. Its disadvantages are its size, unnecessary descriptive material and to some degree, lack of continuity.—*Harris D. Riley, Jr., M.D.*

PHYSICIAN'S BOOK COMPENDIUM 1969-70. The Medical Book Reference for Physicians. Edited by Max Celnik. 846 pp. New York: Physicians' Book Compendium Inc., 1969. \$29.50.

The basic concept behind the publication of this catalogue is a sound one and perhaps future editions will correct the major problems associated with this first edition. The subject arrangement does not follow reason and the headings assigned under some titles are rather questionable. Coverage is not as comprehensive as claimed and there are a number of typographical errors, some of which relate to the prices of books. No source is given for the "brief description of the contents" of some of the books. The most detracting thing about this volume is the excessive price.—*Harris D. Riley, Jr., M.D.*

SELECTIVE BIBLIOGRAPHY OF ORTHOPAEDIC SURGERY. By American Academy of Orthopaedic Surgery. Second edition. 114 pp.

St. Louis: C. V. Mosby Company, 1970. \$7.25.

This 114 page monograph is a bibliography prepared by the Publications Committee of the American Academy of Orthopaedic Surgeons. Its stated purpose is "to make it easier for those with an interest in orthopaedic surgery to select references pertaining to specific subjects. The ever increasing volume of literature available makes it necessary that the busy practitioner and resident be helped in quickly locating what is needed." The booklet represents a revision of the bibliography published in 1962. It is divided into three parts entitled "Clinical Orthopaedics," "Basic Science and Related Subjects," and "Miscellaneous." It is obviously to be referred to and not read.—*Harris D. Riley, Jr., M.D.*

ADVANCES IN PEDIATRICS. Edited by Irving Schulman, M.D. Volume 16, 469 pp. New York: Yearbook Medical Publishers. 1969. \$15.00.

This is the latest in this excellent series which deals with certain topics in depth. Each year it presents new concepts and reviews recent data in a series of articles by experienced authors. This volume contains 13 articles on topics ranging from the rare and unusual chronic granulomatous disease of childhood to the newer viral exanthems. The article entitled "Immunologic Basis of Atopic Disease" by F. Ellis is clinically oriented, quite comprehensive and will be of interest to most pediatricians.

Each article contains a comprehensive bibliography and there is an 18 page subject index which enhances the usefulness of the monograph. Like previous editions in this series, this monograph is to be recommended to all pediatricians.—*Harris D. Riley, Jr., M.D.*

THE PEDIATRIC PATIENT 1969. By Sarah Gustafson, Ph.D., and David B. Coursin, M.D. 288 pp. with 100 illustrations. Philadelphia: J. B. Lippincott Co., 1970. \$8.00.

This is the latest in the annual

series produced by the Hoffman-La-Roche Company. It is a useful current reference for the trainee, academician and practitioner. Specific subjects are selected which are of timely interest. The literature is screened and a selected group of reviewers have pooled their efforts. This volume includes chapters on the immunologic deficiency state, pediatric gynecology, pediatric pharmacology, sex education, the child in surgery and the usual section entitled "Miscellany in Brief." A wide variety of current subjects are discussed. This is a readable, useful monograph.—Harris D. Riley, Jr., M.D. ☐

DEATHS

THOMAS H. DAVIS, M.D.

1899-1971

Retired, Tulsa surgeon, Thomas H. Davis, M.D., died November 7th, 1971 in Tulsa. A native of Pomeroy, Ohio, Doctor Davis received his medical degree from the University of Cincinnati Medical School in 1924. He established his medical practice in Tulsa in 1926. Doctor Davis was a founding member of the Southwestern Surgical Congress, the Industrial Medical Association and the American Association of Railway Surgeons.

V. R. HAMBLE, M.D.

1884-1971

A long-time Enid physician, V. R. Hamble, M.D., died last month in Enid. Born in Jefferson County, Kansas, Doctor Hamble graduated from Epworth Medical College in 1910. His first practice was in Gohner, Nebraska before coming to Oklahoma in 1914. In 1927, he moved to Enid where he practiced until his retirement three years ago. The OSMA presented him with a Life Membership in 1957. ☐

Miscellaneous Advertisements

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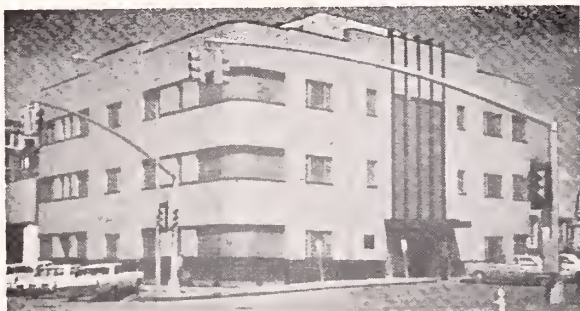
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Editorial, Scientific, Book Reviews	February 15, 1972
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CONTRIBUTIONS

Articles accepted for publication, including manuscripts of annual meeting papers, are the sole property of *The Journal* and must not have been published elsewhere. Authority for approval of all contributions rests with the Editorial Board, and the Board reserves the right to edit any material submitted. Manuscripts should be typewritten, double spaced and submitted in original and one copy. Receipt of manuscripts will be acknowledged and unused manuscripts returned. Used manuscripts will be returned on request. *The Journal of the Oklahoma State Medical Association* is not responsible for the statements or opinions of any contributor.

STYLE

Footnotes, bibliographies, and legends for illustrations should be submitted on separate sheets, double-spaced. Bibliographies should follow in order of: name of author, title or article, name of periodical with volume number, page and date of publication. These references should be alphabetized and numbered in sequence.

ILLUSTRATIONS

Illustrations, other than the author's will not be accepted for publication unless accompanied by written permission to be reproduced. Illustrations should be identified by the author's name and the figure number of the illustrations. The illustrations should be numbered in the same order as referred to in the body of the article. Used photographs, and drawings will be returned after publication if requested. *The Journal* will pay for necessary black and white illustrations within reasonable limitations. The quality of drawings, sketches, etc., must be in keeping with the quality of the magazine.

NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1053, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Our leaders have been busy attending and participating in national and regional workshops, attending district meetings and have conducted the fall board meeting. I'm sure they've managed to get to a football game or two, also.

The annual fall conference for state presidents and presidents-elect was in Chicago, October 10th-13th. Dot Murray reports that, "Motivation and group building, training, program workshops and several prominent speakers highlighted the conference."

The conference opened Sunday evening with regional dinners, followed by Mrs. G. Prentiss Lee, auxiliary president, calling the conference to order. She introduced Richard E. Byrd, Ph.D., who opened his presentation on "Seizing the Times." "This," he said, "is risky business, for it involves changing the customary and comfortable."

The Monday session opened with a presentation by John Cowan, a consultant, speaker and human relations trainer in industry and community organizations. Cowan, working with Doctor Byrd, elaborated on the creative styles.

During the luncheon, Doctor Byrd asked the state presidents and presidents-elect to urge county auxiliaries to decide their missions. Once the mission is established, the program will fall into place, Byrd added.

At the evening dinner, Mrs. John M. Chenault, a member of the AMPAC Board of Directors, introduced the guest speaker, the Hon. Richard Fulton (D), U. S. Congressman from Tennessee's fifth Congressional District.

Rep. Fulton, a member of the House Ways and Means Committee, predicted that the

U. S. would have a national health insurance program within the next 18 months. He supports the AMA's Mediredit bill because it is good for the medical profession, the Congress, and the country.

The October 12th session opened with a keynote address by Ernest B. Howard, M.D., executive vice-president of the AMA. "One of the major needs of the AMA," Doctor Howard commented, "is to improve our credibility and respect from the public." Doctor Howard added that by our actions and words, we will gain or lose the public's respect.

Max H. Parrott, M.D., chairman of the AMA Board of Trustees, urged the auxiliary members to become involved in three areas—legislation, membership and politics.

The annual Southern Regional Workshop was held in Houston, October 21st-22nd. Those who attended, worked and learned were: Edna Dunn, AMA-ERF; Frances Witt, Publications; Charlene Williams, Membership; and President Dot Murray and President-elect Eleanor Johnson. Each gave a report on their individual committee workshop at the Fall Board Meeting.

Zellie Forester installed the incoming officers of the Southern Medical Association's Auxiliary in Miami Beach, Florida.

Please send in names for the nominating committee—Mrs. Port Johnson, 2717 Boston, Muskogee, Oklahoma 74401.

The Executive Board of the Auxiliary to OSMA wish you a Merry Christmas and Peace and Happiness through 1972! □

MRS. J. B. (Betty) SILMAN

Price and wage freeze continues to affect doctors. Phase II guidelines issued by the price commission state that charges of professionals in the service industries must remain frozen at Phase I levels unless increased charges are justified by increased costs since November 13th. In such instances physicians or other professionals may raise their fees without prior approval of the Office of Economic Preparedness. Although Phase II relies heavily on voluntary compliance, price and wage increases are subject to review. A physician may increase his earnings by increasing his productivity, i.e., seeing more patients or performing more services. Wage guidelines for personnel employed by physicians or medical societies are the same as those of other employers. Salaries may not be increased more than 5.5 percent. Questions concerning Phase II guidelines, which became effective November 14th, should be referred to local Internal Revenue Service offices.

AMA witnesses were subjected to close questioning after presenting their testimony on national health insurance before the House Ways and Means Committee. The profession was attacked by James Burke (D-Mass) and Martha Griffiths (D-Mich.). Griffiths several times mentioned Medicare abuses by physicians while Burke said that the AMA was endorsing the status quo. Max H. Parrott, M.D., Oregon, Chairman of the AMA Board of Trustees, said Griffiths was "propagandizing" over an "infinitesimal" number of physicians. The AMA witnesses urged adoption of Mediredit and pointed out that it "avoids the mistake inherent in proposals such as HR 22 (the Kennedy Bill), which would lock medicine into a rigid, monolithic, no choice, bureaucratic system before there is any real evidence that it would make things better."

While national health insurance proposals seemed to be proliferating, one proposal is beginning to fade away. Bearing out recent reports that it was abandoning "Ameriplan,"

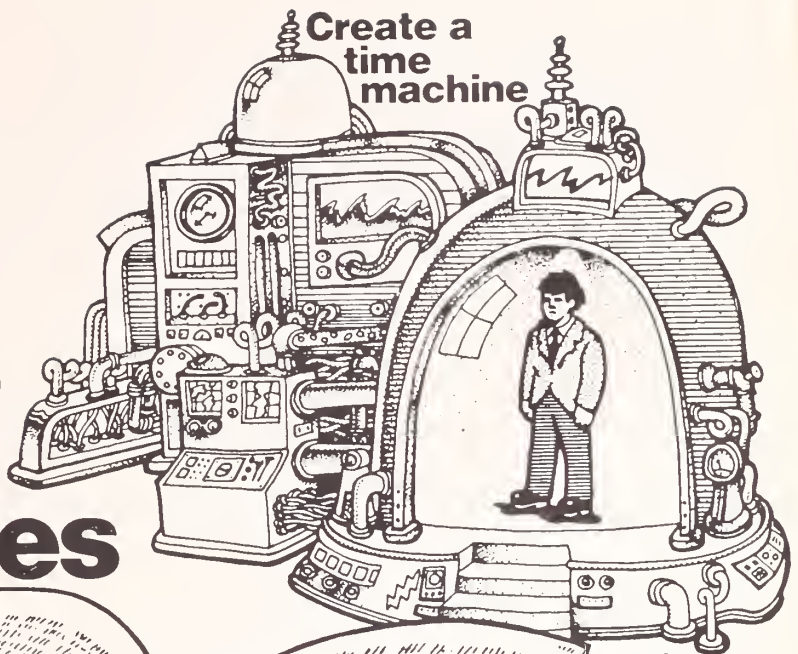
the American Hospital Association has indicated that it will endorse diverse approaches to improved health care. Last July AHA's Board authorized the drafting and introduction of a bill based on the "Ameriplan" proposal to restructure the entire system of delivering and financing health care. In August AHA's House of Delegates approved the draft bill despite sharp disagreement between proprietary and non-proprietary hospitals. Later officials of the association decided to re-evaluate and then drop the plan because questions were raised as to the feasibility of a single-step legislative approach on such a complex issue.

Enrollment in the 108 U. S. Medical Schools climbed to 40,487 during 1970, a gain of 2,818 students over the preceding year. According to the AMA's 71st Annual Medical Education Report freshman enrollment reached 11,348, an increase of 947 over the number of first year students in 1969. Current indications are that the U. S. will have 120 medical schools before 1980. If the trend toward three-year programs continues at its present pace, half of the nation's medical schools will offer such programs in 1973 according to the AMA's Council on Medical Education.

Worldwide, there are now 918 medical schools according to the World Health Organization. It pointed out that 236 medical schools have been established in the past ten years. Sharpest growth was in Brazil where 53 new medical schools opened. India ranked second with 40 and the U. S. was third in this category with 21 new schools. There are now 104 countries which have medical schools.

New help for medical schools is on the way, on November 18th President Nixon signed into law the two big health manpower bills that just passed Congress. The bills authorize nearly \$3.8 billion for programs to increase the supply of physicians, nurses and certain other health professionals. One bill authorizes \$2.9 billion over the next three years to support medical and other health professional schools and health manpower training programs. The other bill authorizes approximately \$885,000,000 to support nurse training programs. Medical schools will be given money grants on the basis of the number of students enrolled. □

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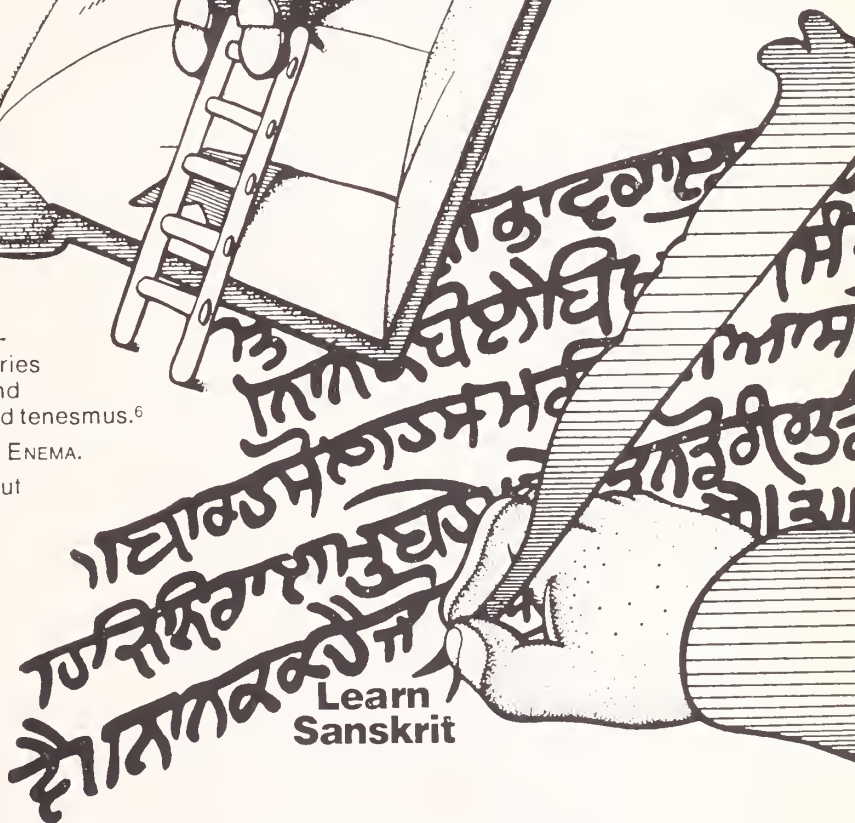
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References: 1. Blumberg, N.: Med Times 91:45, Jan., 1963. 2. Sweeney, W. J., III: Amer J Obstet Gynec 85:908, Apr. 1, 1963. 3. Weinsaft, P.: J Amer Geriatr Soc 12:295, Mar., 1964. 4. Baydoun, A. B.: Amer J Obstet Gynec 85:905, Apr. 1, 1963. 5. Feder, I. A., Flores, A. and Weiss, J.: Amer J Gastroent 33:366, Mar., 1960. 6. Smith, J. J. and Schwartz, E. D.: Western J Surg 72:177, May-June, 1964.



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